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EDITORIAL COMMENT AND NEWS NOTES

Resolutions of the California School Supervisors Association

The following resolutions were passed at the annual business meeting of the California School Supervisors Association held in San Jose, California, on October 10, 1949.

The California School Supervisors Association is profoundly concerned with the role that education must play in the development of democratic citizens for a world society. Now, more than ever before in the history of mankind, educators need to formulate a framework for public education designed to meet the challenges of our time. Such a framework must concern itself with broad policies that will

1. Provide adequate financial and moral support for educational opportunities for all the children of all the people
2. Probe and utilize the findings of research on human needs and development
3. Continually revise curricular programs to meet the emerging needs of children and youth in a dynamic society.

The C. S. S. A. is a professional organization, the purposes of which are

1. To promote the welfare of children and youth
2. To maintain the faith of the American people in education essential to democracy
3. To improve the professional competence of its membership
4. To develop potential qualities of democratic leadership in its membership
5. To provide an opportunity for expression of group opinion on significant educational issues
6. To contribute with other organized groups to sound educational planning

The resolutions of this conference are the outcome of working professional committees and the various section organizations of the

C. S. S. A. They are the organization's endeavor to formulate a statement of the major concerns and commitments of the members of the C. S. S. A.

Therefore, *be it Resolved:*

The State Framework

That, since the State Framework for Public Education in California sets forth commonly accepted purposes and principles for public education at all levels and includes statements to give unity to the educational program for California, the C. S. S. A. reaffirms its support of the State Framework for Public Education in California and pledges its earnest efforts towards implementation, continuous evaluation, and progressive development of this educational document.

Proposition One

Whereas, the record-breaking increase in population in California and the high birth rate of the war and postwar years have created a problem of unprecedented proportions for the public schools of the State, and

Whereas, one factor of this problem is a critical and alarming shortage of classrooms even for the present school population with a result that thousands of children are attending half-time sessions and thousands of others are attending grossly overpacked schools, and

Whereas, these overcrowded conditions which have resulted in the widespread rationing of education in all parts of the State threaten to become steadily worse as the population of school-age children increases during the next ten years, and

Whereas, careful study has revealed that to take care of current needs for classroom facilities and needs of the next ten years, California, if its children are not to be cheated, must build more than 42,000 classrooms by 1959, and

Whereas, of these more than 42,000 classrooms nearly 12,000 must be provided in districts which cannot finance their construction with local revenues, and

Whereas, this means that to provide anything like adequate education in these distressed districts, California will have to open two new 500-pupil schools every Monday morning between now and 1959, and

Whereas, the public school system of California, being a State institution with authorities delegated to local districts, the Legislature in session 1949 recognized the State's responsibility and adopted Assembly Constitutional Amendment 80 providing for reference to the people

of a State bond issue of $250,000,000 to be used in assisting financially distressed school districts to finance school construction, and

WHEREAS, the Legislature also adopted a plan under which district would repay the State for money advanced to them from the bond issue, and

WHEREAS, the bond issue proposal has been designated as Proposition 1 to appear on the ballot at an Emergency Election on November 8, 1949

Now, therefore, *be it Resolved,* That the California School Supervisors Association endorse Proposition 1 as essential to the welfare of the State and particularly that of the boys and girls of California, and that we pledge ourselves to urge its approval by the people on November 8.

FEDERAL AID

That, because the wide range of local economic resources hinders the provision for equal educational opportunities for all children, the C. S. S. A. reaffirms its support of the legislation for federal financial aid for general education in the public schools.

NATIONAL CITIZENS COMMISSION

That the C. S. S. A. commends the work of the National Citizens Commission for the Public Schools in supporting public education as a top priority in national issues because of its unique functions for the public well being in a democracy, and recommends increased lay participation in planning to meet problems of education in every community.

PUBLIC RELATIONS

That the C. S. S. A. enthusiastically supports a state-wide committee on school public relations, under the leadership of the C. T. A., which represents all professional organizations.

HOME-SCHOOL RELATIONSHIPS

That, since parents of school children are a valuable resource which the school cannot overlook in developing educational policies affecting the school and community, and since a positive and co-operative relationship between home and school must be maintained and advanced if the school is to fulfill properly its function in a fluid society, the C. S. S. A. urges that leadership in promoting closer home and school relationship be encouraged.

Rural Education

That we pledge our co-operation in studies of rural children which will consider their living conditions, families, communities, and the curricula and environment of the rural schools which they attend.

Furthermore, that we request conferences on rural life and education to encourage institutions of higher learning to consider the need for a permanent center which would promote the improvement of rural living through drawing together the contributions of such departments as sociology, psychology, economics, and education.

Furthermore, that rural teachers be encouraged to request and attend classes dealing with problems of rural life and that teacher education institutions extend their services so that standards of rural education and living may be improved.

Furthermore, that the C. S. S. A. hereby expresses appreciation to Miss Helen Heffernan for her continued efforts and achievements in improving the lives and educational opportunities of rural boys and girls; to the Rosenberg Foundation; and to the State Personnel Board in augmenting these services by the employment of a full-time consultant in Rural Community Education.

Research

That the C. S. S. A. reaffirms its support of the scientific study of education with the continued use of the findings of research rather than mere opinion in planning supervisory and other education policies and practices.

Professional Co-operation

That C. S. S. A. recognizes the progress made in unifying the effort of the various professional educational organizations of the state and pledges to continue to develop means of intercommunication among professionally active groups in order to promote still closer co-operation.

Special Education

That special educational services, including therapy, be expanded and extended to all children whose needs cannot be met in regular classroom programs. *Furthermore,* that adequate provision be made in the teacher-training institutions of the various sections of the state for the training of teachers in special education.

Social Studies

That the C. S. S. A. pledges co-operation with other interested groups in working with the Curriculum Commission of the State Department of Education in reviewing the research concerning the developmental needs of children and in re-evaluating the areas of experience of the State Social Studies Program designated for various grade levels in order to implement such important understandings as world-mindedness, intergroup relationships, conservation, and other scientific implications and demands of the current social-economic scene.

Audio-Visual Education

That the C. S. S. A. commends the educators of California for their unceasing interest and guidance in the use of library and audio-visual materials for the education of children, and urges the State Department of Education, Bureau of Audio-Visual Education, county and city schools systems to record, for delayed use in the classroom, radio programs having educational value.

Recreation

That the C. S. S. A., in recognition of the diversity of interests and needs of children of various ages, recommends that those responsible for recreation programs extend the offerings to provide greater variety and balance in types of activities appropriate to the play interests and developmental needs of children and young people in order to promote the mental health and physical well-being of all youth.

Cumulative Records

The C. S. S. A. subscribes to the desirability of maintaining and extending the use of the State Cumulative Guidance Record forms as being the appropriate plan for promoting the fullest understanding of the abilities and the needs of individual children and youth, and for facilitating the interchange of such information in the interests of boys and girls who move from one school district to another within the state. The members of the State Committee on Guidance in Education do offer to assume the responsibility for developing the fuller use of the present California Guidance Record for Elementary Schools, but also the further co-operation with secondary school personnel to develop a continuous record usable from kindergarten through grade fourteen, including a feasible plan for duplicating and transferring individual pupil records among the school districts of the state.

Extended Guidance Services

That, being committed to meeting the needs of all children, youth, and adults enrolled in the public schools of California, we subscribe to and strongly recommend an expansion and extension of guidance services to all age levels of our student population and to all areas of our state. We recognize the need for additional guidance workers qualified for their special responsibilities through adequate training, and for state-sponsored guidance publications.

Governor's Conference on Mental Health

That we endorse the recommendations of the Governor's Conference on Mental Health, held in March, 1949, the findings of which pointed up the need for augmented and improved preventive as well as corrective services in mental hygiene throughout our state. To assure action in this area, we urge the California State Department of Mental Hygiene to assume leadership in co-ordinating the efforts of present and future contributing agencies; in initiating studies of mental hygiene needs in rural and urban communities throughout the state, leading to the natural location for mental hygiene clinics and for child guidance clinics; and in the developing of recommendations for the kinds of services needed, together with the most desirable organization of those services.

Intercultural Education

That the C. S. S. A. extends commendation to those administrators who have employed qualified members of minority groups as teachers or as members of supervisory staffs.

Government Housing Legislation

That, because the success of education is dependent upon the total environment provided for children, the C. S. S. A. urges its members to become familiar with government housing legislation and urges support of action in areas where government housing authorities have not been active, in order that full opportunity for slum clearance and adequate housing be made available to all California families.

Teacher Education

That the present-day demands on education require more preparation and skill in the classroom than ever before. Therefore, institutions preparing students for teaching are urged to provide more experience in

classroom teaching for the student teacher. C. S. S. A. further recommends that administrators, supervisors, and teachers extend their fullest co-operation to teacher-training institutions in the student-teaching program.

Appreciations

The C. S. S. A. wishes to extend its deep appreciation for the hospitality and the many courtesies and services extended to the organization at this conference. We are especially grateful to San Jose Unified School District, Santa Clara County School Department, San Jose State College, Pi Lambda Theta, San Jose Chamber of Commerce, Exhibitors, San Jose Mercury-Herald, San Jose Evening News, Radio Station KEEN, Saint Claire Hotel, and to the Tulare County School Department. Their generous expenditure of time and energy has made this conference one of the most successful in the history of the organization.

Be it recommended that the foregoing statement of resolutions be adopted by the California School Supervisors Association at its annual business meeting in San Jose on Monday, October 10, 1949 and that copies be sent to all individuals and groups mentioned in the written report.

Respectfully submitted,

Kate Houx	Frances Lanyon
Martha Farnum	Grace Minch
Herbert Gwinn	Francis Burke
Richard Madden	Maude Byer
Birdie Esser	Harry Wandling
Elcy McGovern	Fannie Shaftel,
Ruby Hill	*Chairman*

Adoption of Textbooks and Teacher's Manuals

Adoption of Textbooks in Music. On recommendation of the State Curriculum Commission, the State Board of Education at its regular quarterly meeting at Los Angeles, September 30 and October 1, 1949, adopted the following textbooks in music, with teacher's accompaniment books and teacher's manuals for use in grades as indicated, in elementary schools in which music is conducted on a graded basis. The adoption period for the books for grades one, two, three, four, seven, and eight was

specified to be not less than six years nor more than eight years beginning July 1, 1950. The adoption period for books for grades five and six was specified to be not less than six years nor more than seven years beginning July 1, 1951.

BASIC TEXTBOOKS IN MUSIC

AND TEACHER'S ACCOMPANIMENT BOOKS AND TEACHER'S MANUALS

GRADE 1

Our First Music (a complete book for teachers), edited by Theresa Armitage and Others, published by C. C. Birchard and Company

GRADES 2 TO 6

NEW MUSIC HORIZONS, by Osbourne McConathy and Others, published by Silver Burdett Company

Second Book (grade 2)—Pupil's book and combined *Accompaniments and Interpretations for the Teacher*

Third Book (grade 3)—Pupil's book and combined *Accompaniments and Interpretations for the Teacher*

Fourth Book (grade 4)—Pupil's book and combined *Accompaniments and Interpretations for the Teacher*

Fifth Book (grade 5)—Pupil's book and combined *Accompaniments and Interpretations for the Teacher*

Sixth Book (grade 6)—Pupil's book and combined *Accompaniments and Interpretations for the Teacher*

Teachers' Manual for Primary Grades

Teachers' Manual for Intermediate Grades

GRADES 7 AND 8

A SINGING SCHOOL, edited by Theresa Armitage and Others, published by C. C. Birchard and Company

Sing Out! (grade 7)—Pupil's book and teacher's book

Let Music Ring (grade 8)—Pupil's book and teacher's book

SUPPLEMENTARY TEXTBOOK IN MUSIC

GRADE 1

NEW MUSIC HORIZONS, *First Book,* by Osbourne McConathy and Others, published by Silver Burdett Company, for distribution on the basis of one book for each pupil in grade one, subject to the limitation that the number of books for any school shall not exceed enrollment in the largest first-grade class

Adoption of Folk Songs Book. At the same quarterly meeting, on recommendation of the State Curriculum Commission, the Board adopted the material entitled "Folk Songs of the United States," prepared by the Co-operating Group in Music of the California School Supervisors Association, Southern Section, as a supplementary textbook in music for grades three to eight, to be distributed on the basis of a set of forty books for the first 500 pupils, and forty books for each additional 500 pupils or major fraction thereof, provided that not more than one book per pupil shall be provided, for an adoption period of not less than six years nor more than eight years beginning July 1, 1949.

Adoption of Teacher's Manuals for Kindergartens. On recommendation of the State Curriculum Commission, the Board adopted the following publications (previously adopted as teacher's manuals for elementary schools) for use in kindergartens:

Selected and Annotated Bibliography in Elementary Education. Published by the California State Department of Education, 1949

The Elementary School Program in California: Handbook for the Orientation of Teachers Entering Professional Service in the Elementary Schools. Prepared by the Committee on Teacher Education of the California School Supervisors Association. Published by the California State Department of Education, 1945

Speech Correction in the Elementary School. Bulletin of the California State Department of Education, Vol. XVII, No. 1, March 1, 1948

Guide to the Teaching of Arithmetic in Kindergarten and Grades One and Two. Bulletin of the California State Department of Education, Vol. XVIII, No. 8, November, 1949

Midcentury White House Conference on Children and Youth

The fifth of the White House Conferences on Children called by the President at ten-year intervals will meet during the week of December 3, 1950. The National Conference Committee, of which President Truman is Honorary Chairman, is composed of 52 educators, physicians, clergymen, businessmen,

economists, and civic, labor, and farm leaders. The committee has adopted the following "focus" for the conference:

The Midcentury White House Conference on Children and Youth bases its concern for children on the privacy of spiritual values, democratic practice, and the dignity and worth of every individual. Accordingly, the purpose of the Conference shall be to consider how we can develop in children the mental, emotional, and spiritual qualities essential to individual happiness and to responsible citizenship.

To do this the Conference shall (a) bring together in usable form pertinent knowledge related to the development of children and indicate areas in which further knowledge is needed; (b) examine the environment in which children are growing up, with a view to determining its influence upon them; (c) study the ways in which the home, the school, the church, welfare agencies and other social institutions, individually and cooperatively, are serving the needs of children; (d) formulate, through cooperative efforts of laymen and specialists, proposals for the improvement of parental, environmental institutional influences on children; (e) suggest means whereby these proposals may be communicated to the people and put into action.

Four White House Conferences—one in each decade of this century—have been held under the auspices of the President of the United States. Each one has produced important results:

1909—called by President Theodore Roosevelt—gave new momentum to the national movement to help dependent children stay in their own homes whenever possible and to find home care for homeless children; stimulated the creation of a Children's Bureau in the Federal Government.

1919—called by President Woodrow Wilson—formulated the first important body of child health and child welfare standards; speeded up public demand for child labor legislation; paved the way for the Sheppard-Towner Act, the first Federal-State co-operative program for improving State and local services for children.

1930—called by President Herbert Hoover—produced the most comprehensive statement of the needs of children ever assembled in one set of documents; these standards were highlighted in a Children's Charter, widely used through many years; pointed up the need for special-

ized training of people working with children; advanced the profession of pediatrics, and stimulated progressive education.

1940—called by President Franklin D. Roosevelt—highlighted the importance of the child in a democracy; canvassed the fundamental principles in our developing democracy and the conditions and services necessary for the well-being of children. . . .

Simultaneously with national planning, State planning bodies for children have centered their attention on the 1950 Conference theme. A state-wide workshop on "The Child in His Family and Community" is being held this month at Asilomar.

New Publication of State Department of Education

Leslie Beatty. *Guide to the Teaching of Arithmetic in Kindergarten and Grades One and Two.* Bulletin of the California State Department of Education, Vol. XVIII, No. 8, November, 1949. Sacramento 14: California State Department of Education, 1949. Pp. viii + 76.

This bulletin is designed to help teachers of kindergarten and primary-grade children to teach arithmetic that will function in the everyday lives of children now and in their later lives as adults. It will serve as a guide to the informal introduction of arithmetic prior to the use of more formal textbook materials.

Committees of teachers, principals, supervisors, superintendents, and college teachers of education in four sections of the state helped in determining the content of the publication. Results of research in child development and in arithmetic curriculum were analyzed, and materials of instruction prepared by school systems throughout the state were examined and utilized. Illustrative charts and photographs are included.

On recommendation of the State Curriculum Commission, the material in this bulletin was adopted by the State Board of Education as a teacher's manual for use in the public elementary schools of the state. Copies are supplied to public schools on orders placed through county, city, and district superintendents of schools. The price to others is 25 cents a copy, 20 cents each in lots of 10 or more. Orders should be addressed to the Bureau of Textbooks and Publications, State Department of Education, Sacramento 14.

A STUDY OF MODERN CALIFORNIA

Prepared by a Committee of Teachers, Principals, and Supervisors, Ventura County[1]

This outline for a study of modern California is presented to the teachers of California in the belief that through similar activities California's children can gain in understanding and appreciation of their State and its place in the nation and the world.

The suggested series of experiences in the study of California is designed to provide abundant opportunities for social, emotional, intellectual, and physical growth for ten- and eleven-year olds. The experiences make use of children's interests and their natural drives to learning. Innate desires to explore, to experiment, to manipulate, to dramatize, to satisfy curiosity, to construct, to communicate, and to create esthetically will find wholesome expression in this study. As it progresses, children will have practice in democratic behavior, in planning together worth-while activities, in discussing problems, and in drawing sound conclusions. Opportunity is given for using judgment and discrimination, for making contributions to the group activities, and for growing in an appreciation of California and its people.

California is a complex state, of significance to the progress of the nation and the world. It has a larger area and a greater diversity of natural economic resources than most of the principal European countries. Within its borders can be found nearly every combination and every contrasting extreme of topography, climate, soils, minerals, plants, and animals that exist anywhere in the United States. This diversity of physical environment,

[1] The Committee (1948) included Mrs. Thelma Pierce, General Supervisor of Instruction, *chairman;* Mrs. Ruby Berry, Nordhoff elementary school; Catherine Davies, Somis elementary school; Lorna DeVana, Nordhoff elementary school; Doris Holden, Avenue elementary school; Wilma LaRose, Mill elementary school; Marcelyn Meyer, Nordhoff elementary school; Mrs. Florence Millburn, Principal, San Antonio elementary school; Roy L. Vantine, Principal, Nordhoff elementary school; Berenice Barnard, Supervisor of Music, Ventura County.

resources, and activities gives California economic stability and charm as a place in which to live.

Its varied resources and industries make an important and, in some instances, unique contribution to world culture. Some of the most important natural resources are redwood forests; extensive deposits of gold, borax, and petroleum; excellent harbors; valuable products of the fertile valleys and the long seacoast; varied and beautiful scenery and a mild climate. The industries that use these resources are manifold.

A study of modern California and its resources can be approached in a variety of ways, depending upon local interests and activities. Interests of the pupils will vary in different parts of the state, depending upon the variety in local industry and the availability of appropriate firsthand experiences. A visit to a county or state fair may stimulate interest in certain agricultural products; a gusher in a nearby oil field may be of such intense interest as to motivate a study of petroleum; a large flock of sheep moving through the community to new feeding grounds may lead to a study of wool. It is suggested that the study be initiated by arousing the interest of the pupils through materials selected for their appeal and their relation to the field to be covered.

Initiation of the Study

The initial environment should contain materials relating to many industries, arranged in the classroom in interest centers which the children investigate for a short period and from which they select a few areas for intensive study. The industries suggested are textile manufacture, agriculture, the production of petroleum, lumbering, fishing, and mining. The following are some of the products that may be selected for special attention: cotton, wool, citrus fruits, deciduous fruits, hay, dairy products, oil, lumber, fish, gold, and borax. A center for each product should deal with geographical areas, workers, tools, raw materials, processed materials, and vehicles for transporting them.

The following lists are given as guides to the selection of items for the initial environment:

Pictures

- Workers in oil fields, drilling, pumping, transporting oil
- Tank farms, railroad tank cars, oil freighters
- Agricultural workers, picking cotton, shearing sheep, packing oranges, drying fruits, hauling hay
- Lumbermen felling trees, floating logs, sawing timber
- Fishermen hauling in their laden nets
- Miners panning gold, mining borax

Objects

- Train of miniature freight cars including a refrigerator car of oranges, tank car for petroleum, hopper car of borax, box car of baled cotton, stock car loaded with cattle, flat car for logs
- Fishing barge with nets
- Bottles containing petroleum products (tar, crude oil, gasoline, kerosene, lubricating oil)
- Miniature oil derrick
- Oil freighter
- Gasoline tank truck
- Hay wagon
- Samples of pyrites, borax, and oil-bearing rock
- Bales of cotton
- Uncarded wool

Magnifying glass and/or microscope

Maps and Charts

- Large outline map of California on oilcloth
- Large physiographic map of the United States
- Large globe of the world
- Pictorial charts showing products of California
- Graphs showing relative value of some of the products

Books (selected from children's references, pp. 116-120)

The plan is that this study will be undertaken at the beginning of a fall term. The children will explore the interest centers, choose which product each wishes to study, and work together in committees; then, after the exploratory studies have been

made and the committee reports given, the class will select products and industries for intensive study. This sample unit suggests and develops the sequence of experiences in the study of citrus fruits, petroleum, and the mining of gold and borax.

Responses to the Arranged Environment

After a short period of getting acquainted and of recalling and sharing summer experiences, the children are invited to look about the room, to find things of interest, to examine the materials, the pictures, and the books. They may examine all of the materials, including the contents of the bottles containing petroleum products. They may feel the materials, smell them, pour them, and examine them with a magnifying glass. They may play with the loaded freight train, the trucks, and the boats.

Children will discuss the things that interest them. The following recorded conversation is typical.

1st Child: Look at this oil freighter! My uncle is a sailor. I'd like to be a sailor.

2nd Child: There are lots of oil derricks down the Avenue. I know a man who works in the oil fields.

1st Child: Sure, I go with my dad to watch the rig near our house. They are drilling a new well in the Upper Valley.

2nd Child: Did you know that there is an oil sump up there and some cattle fell in?

1st Child: Sure, California has lots of oil; lots of gasoline is made in California.

3rd Child: What is this thing? (core of rock)

2nd Child: That's from the test boring. It comes out when they drill a well.

1st Child: Look at the cotton! I saw people picking cotton in Fresno.

Other children will enter the conversation and a lively discussion may follow.

Examination of the wall charts will show the children that petroleum ranks first among California's products.

After a short exploratory period the children will come together to share the things that interested them.

During the discussion such questions as the following may arise.

What are the most important products in California?
Why are they important?
Where does the petroleum come from?
How do the drillers know where to drill?
Is there much petroleum in other parts of the world?
Where does the freighter take the crude oil?
What are the most important agricultural products?
Why is borax so important?

After the discussion, the children may decide which product each wants to study and the teacher may write on the blackboard:

cotton: John, Peter, June, Ann
wool: Mary, Agnes, Ralph, Alfred
petroleum: Mike, Arthur, Neal, Fred, Harriet
citrus fruits: Alice, Jack, Vincent, Roger, Patsy
lumbering: Allen, Paul, Betty
fishing: Sam, Nickey
deciduous fruits: May, Marilyn, Dick, Pete
dairy products: Helen
gold: Richard, Harry, Mabel, Rose
borax: Albert, Jill, Frances, Henry, Lois

Each group forms a committee to report on the subject chosen. About two weeks of examining pictures, looking at motion pictures and reading from books should furnish adequate material for a committee report to the class.

For the exploratory study, the following references and motion pictures may be used by the various committees.[1] Materials from local chambers of commerce may be added.

References

Alderman and Wilson, *About Los Angeles* (1), pp. 151-69
Beals, *The Rush for Gold* (2)
Buff, *Big Tree* (5), pp. 1-80
Cumley, *America's Oil* (10)
Paden, *Seeing California* (26)
Peattie, *The Pacific Coast Ranges* (27), pp. 59-64, 219-43

[1] The number in parentheses following each item refers to the entry in the list of references, pp. 116-128.

Petersham, *Story Book of Cotton* (28)
——, *Story Book of Oil* (29)
——, *Story Book of Wool* (30)
Salisbury, *Boys' and Girls' California* (34)

Motion Pictures
California (88)
Cotton (91)
The Golden Journey (95)
Golden West (96)
Lumbering in the Pacific Northwest (99)
Natural Resources of the Pacific Coast (100)
The Pacific Coast (104)
Trading Centers of the Pacific Coast (112)
Wealth of the Sea (114)
Wool (115)

After all the reports are given, the children should select the products and industries to be studied for the remainder of the semester. A chart should be made for listing topics in the order decided upon by the children:

1. Petroleum
2. Citrus fruits
3. Mining

In the development of the study, the emphasis will vary with different groups of children. The sequence of experiences herewith presented is suggestive only and may be modified or rearranged to answer the needs of a particular group. The major reason for the study as expressed by the children is to find out about California's products. The needs and desires which develop as the study progresses are indicated by Roman numerals. The experiences to satisfy each need are listed under the main headings.

Books suggested for reading, references for songs and rhythms, and motion pictures to be viewed are listed at the end of this outline in a numbered list of references made up of complete entries, most of which are annotated. Titles referred to in the body of the text are abbreviated, the numbers in parentheses referring to the complete entries on pages 116 to 128.

Suggested Sequence of Experiences in a Study of Modern California

Section I. PETROLEUM

(Note: The teacher will remove from the interest centers in the classroom the books, pictures, and objects that do not pertain to the study of petroleum, adding such materials as will enrich this area. The maps, globe, and general work materials will remain through the development of the unit.)

I. *To Find Out about Petroleum*

Discussing previous play and recalling questions asked

Selecting the important questions and making a chart of "things we want to know":

THINGS WE WANT TO KNOW

1. Where does petroleum come from?
2. How does the driller know where to drill?
3. How did oil get into the ground?
4. How do we get petroleum out of the ground?
5. Why is petroleum important?
6. What is made from petroleum?
7. Who uses petroleum products?
8. Does California have much petroleum?
9. Is there petroleum in other parts of the world?

Checking off these questions as satisfactory answers are found

Listing ways of getting information and gaining understanding, such as the following:

1. Looking at pictures in books and magazines
2. Reading articles in books and magazines
3. Examining pictures on bulletin board or in picture file
4. Listening to stories and articles read by others
5. Discussing firsthand experiences with other pupils
6. Going on excursions
7. Talking to parents, workers, and business people
8. Seeing motion pictures and slides
9. Writing to business firms and government agencies for information
10. Examining samples of materials brought to class
11. Conducting experiments and carrying out processes
12. Examining maps, charts, graphs

Playing with the oil tanker, the tank car, and the other objects

(NOTE: The first dramatic play probably will be in connection with hauling crude oil from the wells to the refinery by tank car, freighter, or pipe line. From this play, the children will discover that there are not enough tank trucks, railroad cars, freighters, nor pipe lines to have satisfying play.)

Deciding to make more tank trucks, tank cars, and oil freighters
Drawing plans, selecting appropriate wood, and beginning construction
Deciding to visit an oil field to see how oil is transported
Making plans for the excursion
Getting necessary permission from principal and parents
Making arrangements for the school bus
Writing to an oil company for permission to visit a nearby oil field
Setting up standards for a good business letter

1. Correct form
2. Courteous expression
3. Clear, concise statements
4. Correct spelling and punctuation
5. Enclosure of self-addressed, stamped envelope for answer

Going on excursion
Watching tank cars being loaded
Observing oil truck being loaded
Examining large pipe lines that carry oil to docks
Noting loading platforms
Talking to field manager, truck drivers, and engineer or brakeman
Asking questions

1. Where is the tank car going?
2. How far away is the refinery?
3. Why does some oil go in trucks, some in ships, and some on trains?
4. What moves the oil through the pipes?

After the excursion, discussing ways of transporting oil, clarifying any misconceptions or disputed points
Seeing motion picture, *Producing Crude Oil* (107)
Discussing the possibility of making a miniature oil field

II. *To Make a Miniature Oil Field*

Deciding on things needed for an oil field
Choosing jobs and listing these with names of children on committees

1. Make derricks
2. Make drilling tools
3. Make tanks for storing oil

4. Make pipes and fittings
5. Make loading platforms

(NOTE: These committees change as the work proceeds. Some children are already working on trucks, freighters, and tank cars. Others will wish to work on the maps, gather pictures for picture file and bulletin boards, or illustrate processes. Dramatic play will continue even if the materials are not completely finished. From the play new problems and new needs will arise.)

Recalling the questions that were listed that still need answers

Discussing the question: How did people first find out about oil?

III. *To Understand How Oil Was First Discovered*

Discussing the various evidences of seepage in the locality

Sharing with other children any personal knowledge and firsthand experiences with oil sumps

Visiting nearby oil sump and talking to the local residents
- Noting the odors of gas, tar, and sulphur
- Discussing why sump is fenced off
- Suggesting ways in which oil might be recovered and used

Bringing back to school samples of oil and tar from sump

Reading *Oil and Gas* (25), pp. 5-14

Dunn and Morrisett, *Power for America* (11), p. 59

Petersham, *Story Book of Oil* (29)

Deciding to visit La Brea or similar tar pits and a museum of natural history

Making plans for excursion
- Writing to Los Angeles County Museum for permission to visit La Brea Hall at museum and Rancho La Brea (Hancock Park)
- Getting written permission from parents
- Making arrangements with principal
- Making arrangements for school bus
- Discussing what may be seen at the tar pits and at the museum
- Listing questions to be answered

Visiting tar pits and museum

Discussing with the attendant questions decided upon by children
- How were the tar pits made?
- How long ago were the tar pits made?
- How long ago were the animals caught?
- What makes the bubbles?

How were the bones preserved?
Why were so many animals caught?
Observing carefully at tar pits and at museum
Asking questions
How can the bones be put together?
How do people know what the animals looked like?
Discussing the excursion
Dramatizing experiences of the animals getting caught in the tar
Reading Alderman and Wilson, *About Los Angeles* (1)
Looking at pictures of prehistoric animals
Petersham, *Story Book of Oil* (29)
Petroleum Industry in the United States (63), p. 27
Dramatizing the asphalt bubbles and the animals in the tar pits
Developing a dramatic rhythmic pattern, with music, of prehistoric animals sinking into tar
Referring to "Animals of the Tar Pits" in James, *Harbor Rhythms* (75), pp. 31-40, for suggestions for songs and rhythms

IV. *To Find Out How Oil Was Made*

Discussing how oil was formed
Reading Bethers, *The Magic of Oil* (3), p. 14
Examining charts of rock strata
References: Cumley, *America's Oil* (10), p. 8
Petersham, *Story Book of Oil* (29)
Concluding that oil collects in pockets in the earth made by folds or faults of rocks
Making wall charts showing rock strata
Reading Richards, *Our California Home* (33), pp. 446, 450
Petersham, *Story Book of Oil* (29)
Reading and discussing various theories given in books and petroleum bulletins
Listening to teacher read from Floherty, *Flowing Gold* (15), pp. 12-16
Examining, with a miscroscope, cores from borings that contain seashells; talking to geologists from oil company
Concluding that a reasonable theory is that petroleum was formed from the remains of plant and animal life buried for millions of years in layers of shale and limestone
Recalling the need to know where to build the derrick in the miniature oil field

V. *To Find Out How a Driller Locates a Deposit of Oil*

Reading to find out how oil was first located
Dunn and Morrisett, *Power for America* (11), pp. 54-61
Oil and Gas (25), pp. 16-20
Contribution of Petroleum to Industry (47), pp. 3-4
Dramatizing story of the first oil well, "Drake's Well"
Seeing motion picture, *Prospecting for Petroleum* (108) to find out how geologists locate oil today
Reading Bethers, *The Magic of Oil* (3), p. 16
Oil and Gas (25), pp. 26-29
Dunn and Morrisett, *Power for America* (11), pp. 59-61
Petersham, *Story Book of Oil* (29)
Discussing the signs that indicate the presence of oil
1. Deposit stone, solid rock through which oil cannot seep
2. Reservoir stone which holds oil in its pores (such as standstone)
3. Signs of a structural trap

Bringing in samples of sandstone, limestone, and shale
Examining, under a microscope, samples of mud, sand, and ooze, noting the empty spaces between the particles
Making a soil box with a glass side through which may be seen layers of shale, limestone, and sandstone tilted to show a structural trap
Examining the core specimens to see the formation of various rock layers
Writing to a large oil company to invite the geologist to talk to the class
Visiting an oil company to talk to the geologist, see his core specimens, and examine his topographical maps
Asking the geologist to explain the use of the seismograph as seen in the motion picture
Examining sketches of sound impulses from dynamite charge in using seismograph
Petroleum Industry (63), p. 45
Cumley, *America's Oil* (10), p. 19
Observing sound truck and recording instruments
Listening to teacher read from Floherty, *Flowing Gold* (15), pp. 59-61

VI. *To Find Out How a Well Is Drilled*

Reading about and examining pictures of derricks and drilling tools
Bethers, *The Magic of Oil* (3), pp. 18, 20
Dunn and Morrisett, *Power for America* (11), pp. 61-63
Petroleum Industry (63), pp. 49-64

Visiting a drilling-tool store and examining the tools
Discussing the difference between rotary and cable tool equipment
Visiting an oil-drilling rig to watch the operation of the rotary equipment
  Observing the flushing of the cuttings with mud
  Examining the evidences of oil-bearing strata
  Talking with the driller and the "roughnecks"
  Noting the size of the bits, how they are attached, and how changed
  Noting the importance of the derrick and how it is made
Discussing the excursion
Seeing motion picture showing drilling of a well, *Petroleum* (105), to clarify concepts and rectify misconceptions
Placing a derrick over the box showing layers of rock
Illustrating cable and rotary drilling
Reading to find out why rotary drilling is preferred
    Dunn and Morrisett, *Power for America* (11), p. 61
Listening to teacher read about the rotary equipment in *Flowing Gold* (15), pp. 63-67
Learning a song, "Men at Work," in *Our Land of Song* (68), p. 117

(NOTE: After working on the derrick and drilling equipment for a while, the committees may wish to make another visit to see a rig in operation.)

Seeing motion picture, *Producing Crude Oil* (107); selecting certain activities from the motion picture to be dramatized
Making rhythmic sequence of drilling a well
Reading to understand the difficulties involved in drilling a well
    Oil and Gas (25), pp. 21-25
Learning a song about drilling "Oil Wells" from James, *Harbor Rhythms* (75), p. 41
Dramatizing
  Locating an oil deposit
  Making surface survey
  Mapping outcropping of rocks
  Measuring thickness and inclination of strata
  Using a gravity meter
  Using a seismograph
  Setting up the rig
  Drilling a well
  Encountering difficulties in drilling
  Being a "roughneck" who makes repairs

VII. *To Understand Ways in which Crude Oil Is Obtained from the Well and Transported*

Finding out what causes a "gusher"
Listening to teacher read from *Flowing Gold* (15), pp. 75-79
Discussing how a gusher is brought under control
Reading *Oil and Gas* (25), pp. 21-25
Floherty, *Flowing Gold* (15), pp. 79-81
Reading an original story about a gusher
Writing a creative story about a gusher
Discussing standards for a good story
1. Something interesting to tell
2. Vivid, colorful words that make the reader see a picture or feel strongly
3. Correct punctuation and spelling
4. Emphasis on one incident

Sharing stories with the group
Making pictures of a gusher
Creating a poem about a gusher
Setting the poem to music
Discussing various ways of getting oil from the well
Examining diagrams of a gas line in *Petroleum Industry* (63), pp. 71-73
Concluding that
1. Natural gas pressure pushes oil up
2. Oil is pumped to the surface
3. Natural gas is captured and returned to the well to push the oil up

Setting up miniature oil field, illustrating types of recovery
Discussing the major oil-producing sections of California
Referring to
Richards, *California* (32), pp. 315-19
Petroleum Industry (63), pp. 93, 145
Smith, *California* (36), p. 40 (for oil by counties)
Wilbur, *Conservation* (39), pp. 58-64 (Kettleman Hills fields)
Alderman and Wilson, *About Los Angeles* (1), pp. 252-55 (Los Angeles and Long Beach fields)
World Book Encyclopedia (40), pp. 6243-54
Floercky, *Visual Geography* (13), p. 40
Fortune, February, 1945 (61), p. 138
Entering on the map of United States the major oil fields
Petroleum Industry (63), pp. 12-16, 143

Dunn and Morrisett, *Power for America* (11), p. 70
Mitchell, *My Country 'Tis of Thee* (59), p. 248

Examining a globe and locating major oil fields in other parts of the world

Discussing what happens to the oil when it comes from the well
Petersham, *Story Book of Oil* (29)
Bethers, *The Magic of Oil* (3), pp. 24-29
Cumley, *America's Oil* (10), p. 22

Referring to wall chart showing diagram of oil from well to refinery

Recalling from previous reading and discussions that oil is transported from well to refineries in four ways: tank cars, oil tankers, trucks, and pipe lines

(NOTE: Some tank cars and trucks will have been made before, but oil tankers, which are particularly important in California, may be studied in greater detail)

Visiting a dock and observe loading of petroleum into a tanker

Talking with the dock foreman and the ship's officer

Noting the numerous pipes, hoses, pulleys, valves, and other loading machinery

Asking questions
Where is the tanker taking the oil?
How many barrels does the tanker hold?
How large is the tanker?
How many men make up the crew?
How long does it take to load?

Charting on map of the United States the route of the oil tanker to the refinery

Making an oil tanker and oil-loading docks

Examining chart of oil tanker

Reading, or listening to teacher read, from Floherty, *Flowing Gold* (15), pp. 16-167

Dramatizing a sea voyage such as described in *Men Against the Sea*,[1] identifying self with members of crew

Learning "Work Song" (chantey), James, *Harbor Rhythms* (75), p. 28

Appreciating feelings of crew members who leave their families and follow the sea

Listening to Young Peoples Record, "What the Lighthouse Sees" (86)
R. C. A. Rhythmic Activities, "Masquerade" (Sailor's Hornpipe) (84)

[1] Nordhoff, Charles B., and Hall, J. N., *Men Against the Sea*. Boston: Little, Brown & Co., 1940. This is the second volume of the Bounty Trilogy, of which the first is *Mutiny on the Bounty* and the third, *Pitcairn's Island*.

VIII. *To Find Out How Oil Is Stored*

Finding out how oil is stored before refining

Recalling large tanks and pipe lines observed at the oil field

Reading about "The Big Inch," in Floherty, *Flowing Gold* (15), pp. 118-55

Discussing tank farms

Reading about storage and transporting of oil

Floherty, *Flowing Gold* (15), pp. 84-117

Oil and Gas (25), p. 32

Petersham, *Story Book of Oil* (29)

Discovering the various ways of storing that have been tried

1. In large holes in the ground
2. In barrels
3. In wooden tanks
4. In concrete underground containers
5. In metal tanks

Discussing reasons for various kinds of containers and conveyors

Round-ball shaped

Cylindrical

Rectangular

Recalling that crude oil is moved from the field to a large refinery to be made into valuable products

Deciding to find out about refining oil

IX. *To Find Out About Refining Oil*

Listing questions that have come out of discussion

1. What is refining?
2. How are the gasoline and lubricating oils separated?
3. What is a bubble tower?
4. What products other than gasoline are made?
5. Does all crude oil produce the same things?
6. What is the difference between cracking and polymerization?

Visiting a refinery, talking to the superintendent, observing the equipment and charts

Noting the many towers for processing

Discussing with the superintendent the various methods of refining

1. The pipe still, which uses bubble fractionating tower to separate the products—gasoline, kerosene, fuel oil, lubricating oil
2. Cracking process, which increases the amount of gasoline obtained by breaking down heavier distillates

3. Polymerization, which combines refinery gases and natural gases into gasoline

Obtaining samples of various products to take to school

Reading and examining diagrams in
Cumley, *America's Oil* (10), pp. 35-39
Oil and Gas (25), pp. 37-43
Dunn and Morrisett, *Power for America* (11), pp. 64-70
Bethers, *The Magic of Oil* (3), pp. 30-39
Petersham, *Story Book of Oil* (29)

Setting up a small distillation experiment

Making a mural showing a refinery

Comparing original and distilled products as to color, odor, viscosity (resistance to flowing), texture, and use

Discussing findings from excursion, from reading, and from the experiment

Setting up standards for good discussion period:
1. Make clear concise statements
2. Make statements based on evidence
3. Ask clear questions
4. Consider opinions of others
5. Examine statements as to accuracy and authority
6. Discriminate between the important and the unimportant points
7. Decide on the value of different sources of information
8. Gather facts and draw sound conclusions

Seeing motion picture, *Petroleum* (105), to clarify points

Making large diagram of refining plant showing the route from pipe line to finished products

X. *To Understand How Valuable the Products of Petroleum Are in Modern Living*

Organizing, labeling, and exhibiting examples of some of the products refined from crude oil: fuel oil, gasoline, kerosene, naphtha, paraffin, glycerin, alcohol, ammonia

Examining these materials by feeling them, smelling them, noting their consistency and their reaction to heat and cold

Discussing their uses and deciding which are the most important
Dunn and Morrisett, *Power for America* (11), pp. 76-77
Oil and Gas (25), pp. 39-42
Contribution of Petroleum to Industry (47)
Cumley, *America's Oil* (10), pp. 22-27

Making charts of some of the most important contributions of petroleum products, as in the following lists:

PETROLEUM'S CONTRIBUTIONS TO THE HOME

1. Lubricants and fuel for processing and transportation of food
2. Oils, extracts, condiments used in foods
3. Wax paper, milk cartons, paraffin to preserve foods
4. Medicine
5. Sanitation safeguards, antiseptics, and disinfectants
6. Pharmaceutical products
7. Plastic and rubber articles
8. Insecticides and germicides
9. Good-grooming aids: soaps, cold creams, hand lotions, combs, hair brushes
10. Textiles, synthetic fibers
11. Cleaning fluids
12. Oil and gasoline for buses, automobiles, and airplane transportation
13. Lubricants for home use
14. Paints, varnishes, lacquers, waxes, polishes
15. Fuel for heating of the home
16. Cooking fuel
17. Household detergents
18. Plastic furniture and utensils

PETROLEUM'S CONTRIBUTIONS TO INDUSTRY

1. Gasoline for automobiles, trucks, buses, farm machines, stationary engines
2. Fuel oil for diesel motors in ships, trucks, locomotives, tractors, buses
3. Lubrication for machinery and moving parts
4. Fuel for heating water to generate steam for mining and manufacturing
5. Raw materials for road building, for synthetic rubber, and for plastics

PETROLEUM'S CONTRIBUTIONS TO THE FARM

1. Power and lubrication of mechanized equipment
2. Gasoline and oil for automobile, truck, airplane transportation
3. Lubricating oils for protection of tools

4. Roofings, waterproofing, insulation, rustproofing
5. Fertilizers
6. Pest and plant disease controls, insecticide
7. Orchard heaters, fuels for
8. Bases for hormone sprays and dusts
9. Chemical weed killers

XI. *To Find Out How Products Are Distributed and Marketed*

Discussing what happens to products from the refinery

1. How are gasolines marketed?
2. How are fuel oils sent to the consumer?
3. Where are the plastics, the medicines and the insecticides manufactured?

(NOTE: Children usually know that gasoline and automobile lubricants are sent by truck to large bulk plants for storage and redistribution to service stations)

Visiting a bulk storage plant, talking to the superintendent about the different grades of gasoline, motor oils, and greases

Looking into the large tank trucks to see the various compartments for different grades of gasoline

Watching a truck being loaded with gasoline

Talking to the driver of the truck who delivers motor oils and lubricating grease

Noting the containers: cans, bottles, drums

Reading sections on marketing petroleum products in
Floherty, *Flowing Gold* (15), pp. 237-43
Petroleum Industry (63), pp. 110-28
Cumley, *America's Oil* (10)

Discovering that over a million people are employed in the petroleum industry

Talking to people who work in refineries and service stations

Discussing the people who work in the oil industry

Deciding that these people make a valuable contribution to our country and to the world

XII. *To Understand the Effect of the Petroleum Industry on the Development of California*

Discussing the effect of the petroleum industry on the development of California

1. In stimulating automobile and airplane manufacturing

2. In furthering highway construction
   Seeing motion picture, *Builders of the Broad Highway* (87)
   Learning song, "The New Highway," in *American Singer* (70), Book VI, p. 33
3. In attracting workers for the production and refining of crude oil
4. In supporting factories making drilling tools and equipment
5. In increasing ship transportation
   Seeing motion pictures: *Seaports of the Pacific Coast* (111)
   Freighter at Sea (93)
6. In employing large numbers of workers in marketing of products
7. In permitting the extension of truck crops and citrus into colder areas
8. In stimulating bus transportation
   Learning song, "Green Bus," in *American Singer* (70), Book IV, p. 28
9. In permitting the movement of people from one area to another
   Seeing motion picture, *Transportation in the United States* (113)

XIII. *To Find Out About the Conservation of Oil*

Seeing motion picture, *Oil for Aladdin's Lamp* (101)

Recognizing the importance of petroleum and its irreplacable character, and discussing oil reserves

1. How much oil is still available?
2. What percentage of the United States supply is in California?
3. Has oil production in California been wasteful?
4. How can the supply be wisely used?
5. What methods of conservation are now employed?
6. What other measures might be helpful?

Consulting references:

Cumley, *America's Oil* (10), pp. 41-48
Mitchell, *My Country 'Tis of Thee* (59), pp. 279-81
Wilbur, *Conservation* (39), pp. 49-71
Floherty, *Flowing Gold* (15), pp. 246-56
Fortune, February, 1945 (61), p. 138

XIV. *To Culminate the Study of Petroleum*

Dramatizing elements of the study
   Locating a well
   Drilling a well

Capping a gusher
Transporting oil via pipe line, oil tanker, or tank car to refinery
Delivering gasoline from bulk plants to service stations, airports, or docks
Operating vehicles that use gasoline, buying at service stations

(NOTE: Since the emphasis in all the books and articles read is on the importance of gasoline as a source of power to run motor vehicles, a discussion of why motor vehicles are so important to our economy might follow and lead to the importance of trucking in the citrus industry.)

The transition to the next section should be made by removing items relating exclusively to the study of petroleum and placing in the environment some items that will challenge interest in the citrus industry. The maps of California and the United States will remain and serve to tie together all of the sections in the unit. Other articles included will be books on citrus fruit, pamphlets from the California Fruit Growers Exchange, pictures of groves and packing houses and loaded fruit trucks.

SECTION II. CITRUS FRUITS

I. *To Learn about Citrus Fruits*

Examining books and charts to verify the importance of agriculture in California
"Economic Survey of California" (48), p. 431
Citrus Fruits (6), p. 11
Writing to county farm adviser for literature on farm products
Talking to parents and farmers and sharing findings with class
Sharing with other children information from personal experience
Observing farms in locality
Discovering that relatives of many of the children work in packing plants
Watching the trucks to note what they are hauling
Inviting a member of the Grange or the local farm adviser to talk to the class
Recalling the orange exhibits at a county fair
Deciding that the citrus industry is important and worth further study
"Economic Survey of California" (48), pp. 429-31

II. *To Find Out about Citrus Growing in the Community*

Discussing citrus growing in the locality

Listing questions on blackboard, for example:

1. Why are orange shows held?
2. Where do the oranges come from?
3. How are they picked?
4. How are they transported?
5. What happens to oranges at the packing houses?
6. What makes the oranges clean and shiny?
7. How do they get oranges that are the same size in each box?
8. Who puts them in the boxes?

III. *To Find Out What Happens in the Orange Packing House*

Planning to visit a local packing house

Sending for the set of large photographs of orange growing from Educational Division, California Fruit Growers Exchange, Sunkist Building, Los Angeles 55, California

Writing a letter asking for permission to visit the packing house

Reviewing standards for a good business letter

Reviewing the main parts of a letter so that it will be correct and in order

Making plans for the excursion

Get permission from school office

Get signed notes from parents

Arrange for bus transportation

Discuss questions to ask the guide

Listing important questions

1. How are boxes made?
2. How are boxes labeled?
3. How are oranges sized and graded
4. Why are oranges stamped?
5. How many oranges are put in each box?
6. Are oranges shipped by rail or truck?
7. Why are the boxes or oranges weighed?
8. How are the oranges kept fresh?
9. How is a boxcar refrigerated?
10. Where do these oranges go?
11. How are oranges tested to determine whether they have been frozen?

Visiting packing house

Talking to the guide

Getting answers to questions

Watching operations and machines
Noting sounds, odors, temperatures and reasons for these
Observing workers and appreciating their contribution to the total job
Noting skill and efficiency needed for each operation
Discussing how each growers' fruit is processed separately
Discussing groves from which oranges have come
Examining refrigerator car
Buying a box of oranges to take to school

Discussing trip to the packing house
Writing letter thanking manager of packing house
Checking off questions which have been satisfactorily answered
Making a chart showing the journey of an orange from the grove to the consumer

1. Trucked to packing house
2. Stored for five days in cool airtight room in which ethelyn gas circulates
3. Washed in warm, soapy water
4. Dried with hot air
5. Waxed and polished
6. Graded into fancy, choice, standard grades
7. Sized automatically into bins
8. Packed in boxes by size
9. Shipped by refrigerator car

Reading materials from California Fruit Growers Exchange:
Citrus Fruits (6)
The Story of California Oranges and Lemons (38)
Examining oranges for color, texture, odor, taste
Making orange juice for class consumption
Dramatizing activities of packing house

IV. *To Understand How Oranges are Grown*

Questioning further the source of the oranges being packed
Deciding to visit an orange grove
Listing questions to discuss with grower

1. What kinds of oranges are grown?
2. What is the difference between navel oranges and Valencias?
3. When do they ripen?
4. How long does it take to ripen each kind?
5. How large is the grove?

6. How were the trees planted?
7. What kind of root stock was used?
8. How old is the grove?
9. How long will the grove produce?
10. How is the grove protected from freezing, insects, and disease?

Making plans for the excursion as before
Visiting the grower
  Getting answers to questions
  Examining trees, noting shape, size, condition of foliage and fruit
  Discussing with grower the care that the grove needs: cultivation, smudging, irrigation, spraying, fumigating, fertilization, pruning, and weed control
Observing methods of picking
Experimenting with picking, carrying the picking bag, climbing the ladders, clipping the fruit, emptying the bag into the field box
Discussing with grower how he knows when to pick the oranges
Asking questions
  Who picks oranges?
  Where do they live?
  Are they transient or permanent workers?
  How much are they paid?
  Do they have their families with them?
Noticing the types of houses provided for workers
Getting samples of green and ripe fruit to take back to school
Getting samples of frozen and unfrozen fruit
Making pictures of interesting parts of trip
Seeing motion picture, *The Orange Grower* (102), selecting activities, such as transplanting, spraying, covering with canvas, spreading fertilizer, carrying ladders, picking fruit, to use in a rhythmic dramatic sequence
Listening to recording, "Love for Three Oranges" (83)
  References for teacher:
    Hartshorn, *The Pilot* (72), pp. 133-135
    Hartshorn, *Progress* (73), p. 65
Checking off on the chart the questions which have been answered
Discussing the improvement of living conditions for agricultural workers
  Reference for teacher: McWilliams, *Factories in the Field* (56)
Seeing motion picture, *Give and Take with Mexico* (94)
Taking fifteen oranges to packing house and making test to find sugar content and degree of maturation

Discussing smudge and wind machines to protect fruit from freezing
Reading Pitkin, *Seeing Our Country* (31), pp. 345-48
Listening to radio reports from weather bureau, broadcast for the citrus industry
Keeping a temperature chart for the local district
Discussing the effect of dew point, temperature, and wind velocity on the need for orchard heating
Sharing with the group experiences of children who have helped with smudging
Creating rhythmic verse, such as the following, and setting to a tune

"Smudging
Fill the smudge pots
Fill the smudge pots
Light them up
Light them up
See the smoke! Heavy smoke!
Keep the frost away."

Dramatizing the exciting activities that take place when the thermometer drops to below freezing temperatures, such as
- Filling and placing smudge pots
- Lighting smudge pots
- Watching thermometers
- Broadcasting frost warnings
- Listening to frost warnings
- Giving the warning to neighboring groves
- Driving a truck to haul fuel oil
- Checking thermometers in various sections of the grove

Writing a creative story about saving the fruit from frost damage
Making pictures of the grove at night with the flickering lights and the smoke from the heaters
Discussing requirements for a good, producing orange grove, suggesting that the following are important:

1. Long warm growing season with much sunshine
2. Mild winters with temperatures 30° F. or above most of the time. Provision for keeping this temperature in colder weather
3. Soil moisture applied at the correct time in adequate amounts
4. Good soil conditions determined by chemical analysis and examination
5. Clean healthy trees, free from disease, insects, and dead wood

6. Orange stock of good varieties: Valencias and navels budded on strong nursery stock
7. Good drainage with proper slope for irrigating

Visiting a citrus nursery to see budding of trees and talking to the nursery man
Seeing motion picture, *The Golden Journey* (95)
Examining temperature maps and deciding which areas of California, the United States, and the world would have desirable weather conditions
Discussing the effect of soil on the flavor and sugar content of oranges
Testing soil samples for texture and composition
Concluding that southern California appears to have ideal conditions except for water supply and susceptibility to insects because of mild winters
Discussing tremendous importance to farmers of water supply

V. *To Find Out More about Water Supply*

Discussing the amount of water needed per year for a bearing grove
Discussing available sources of water in California: rainfall, wells, streams, reservoirs, aqueducts
Seeing motion picture, *Rivers of the Pacific Slope* (109)
Reading Fairbanks, *Southern California* (49), pp. 175-86
Simpich, "More Water for California's Great Central Valley" (35), pp. 645-64
Central Valley Project (9), pp. 3-163
Seeing motion picture, *Colorado River* (90)
Examining rainfall maps and charts; referring to
Floercky, *Visual Geography* (13), pp. 18-26
Concluding that orange groves, which are evergreen, must be irrigated to provide sufficient soil moisture
Discussing sources of irrigation water
Visiting a well in the neighborhood
Noting type of pumps and kind of motive power, gasoline or electric motors or wind propelled
Discussing kinds of pumps: rotary pumps, jack pumps
Making a simple jack pump
Experimenting with lifting water from a jar or tub
Watching operation of a centrifugal pump
Recalling pumping of petroleum

Discussing kinds of wells: deep wells, surface wells, artesian wells, and springs
Fairbanks, *Southern California* (49), pp. 175-85
Hunt, *California, A Little History* (50), pp. 140-41
Discussing what causes springs and artesian wells
Looking up charts showing how water occurs in the ground
Recalling and re-examining charts of rock strata, faults, and mounds made in the study of petroleum. Recalling that water, being heavier than oil, is often found below the oil accumulation
Discussing storage of water and moving of water from source to grove
Experimenting with hose and tank showing gravity flow
Discussing the All-American Canal in Imperial Valley, the Los Angeles Aqueduct from Owens River and that from Mead Lake
Learning song, "The Great Grand Coulee Dam," in *Music Everywhere* (67), p. 124, substituting the words, "Hoover Dam" or "Shasta Dam" for "Great Grand Coulee Dam"
Reading about William Mulholland and his search for water
Recognizing the vital importance of water supply to the farmers of California
Seeing motion picture, *Irrigation Farming* (98)
Discussing what can be done to conserve water and to increase the supply
References: *Central Valley Project* (9), pp. 3-163
Richards, *Our California Home* (33), pp. 237-47
Floercky-Shippey, *California Progress* (14), pp. 7-26
Discussing settling basins, reforestation, dam construction, flood control, and other means of conserving water
Visiting nearby dam or flood control area
Noting means of preventing erosion by ground cover and by terracing
Discussing contour planting of citrus trees
Reading Richards, *California* (32), pp. 278-80
Entering on the large wall map of California the important dams which now form lakes for irrigation in local districts or counties
Recalling motion picture on Hoover Dam, *The Colorado River* (90)
Referring to Floercky-Shippey, *California Progress* (14), pp. 7-36
Discussing methods of irrigation
Reading Cleland, *California in Our Time* (45), p. 159
Richards, *California* (32), pp. 271-77
Comparing advantages and disadvantages of furrowing, overhead spraying, and use of tree basins for irrigation

Finding answers to such questions as the following:

1. How does the farmer know when to irrigate?
2. How does he know how much water to use?
3. How does he decide which is the best way to irrigate?

Discussing the capacity of different soils to hold water: sandy soil, heavy clay, loam

Selecting samples of these soil types for the forthcoming experiment: Place samples in 3 different boxes. Pour the same amount of water into each box. Note the run off, the amount of soil moistened and the length of time it takes for the soil to become dry

Drawing conclusions from the evidence in this experiment

Discussing the effect of the weather and the amount of foliation on the frequency of irrigation

Recognizing that scientific methods of orchard management are necessary for successful groves

Reading *The Story of California Oranges and Lemons* (38)

Listening to teacher read from *Citrus Fruits* (6) to learn of the special instruction that growers need on soil preparation, fertilization, budding, mulching, intercropping, replanting, and transplanting

Discussing need for soil-conditioning through commercial fertilizers; referring to *Citrus Fruits* (6), p. 11

VI. *To Learn More about Grove Protection*

Recalling that insect pests and diseases are serious problems in California because of the mild winters

Recalling the thorough washing of the fruit observed in the packing house

Discussing reasons for the strong, soapy-water bath

Reviewing motion picture on spraying and fumigation, *The Orange Grower* (102)

Discussing which pests and diseases are the most serious in the local groves

Talking with parents, growers, and workers to find out precautions taken to prevent infestation

Sharing with other pupils any personal experiences at county and state agricultural inspection stations

Inviting local officials of an insectary or fumigating company to talk to the class

Visiting a ladybird propagating laboratory

Learning song, "Ladybird," in *Music Everywhere* (67), p. 199, and *Music in the Air* (71), p. 38

Observing spraying and fumigating of nearby groves

Discussing the various agencies that assist the farmer

Agricultural department, University of California
Agricultural colleges
County farm advisers
United States Department of Agriculture
Research departments in citrus associations
Research departments in industries

Writing to some of these agencies requesting material on the citrus industry in the United States

Discussing new products that are helping the grower

Recalling, from the section on petroleum, new weed killers, new insecticides

Discovering that citrus associations help the farmer in growing, protecting, and marketing oranges and lemons

Discussing the California Fruit Growers' Exchange and its effect on the development of the citrus industry

Cleland and Hardy, *March of Industry* (46), pp. 106-11

Talking to the manager of a citrus association

Getting answers to questions

1. How are oranges sold?
2. To what parts of the world are they shipped?
3. What grades of fruit are recognized?
4. Who makes the regulations as to grading and packing?
5. How are various sizes and grades labeled?
6. What is done to prevent spoilage?
7. What are the various ways in which oranges and lemons differ as to packing and marketing?
8. For what are the poorer grades used
9. What part does advertising play in the tremendous popularity of citrus fruits?
10. What are the real values in nutrition?

Buying a field box of oranges from a grower, and going through the various processes of washing, waxing, wrapping, labeling, packing, marketing

Discussing the many uses of citrus fruits, collecting recipes, and making booklets

Writing advertising material to sell oranges and lemons
Evaluating material:
  Does it present facts vividly to catch the attention?
  Are the facts accurate?
  Will it appeal to the public over a long period of time?
  Is there fairness and integrity in presentation of facts?
Locating on map of California the main citrus producing areas
Entering on a map of the world the places where California oranges are sold
Referring to pictorial maps in
  The World Book Encyclopedia (40), p. 1131
  Richards, *California* (32), p. 274
  Floercky, *Visual Geography* (13)
Discovering that California produces almost all of the lemons of the world and a large percentage of the oranges

VII. *To Find Out about Other Important Farm Products*

Discussing some of the other important farm products, referring to pictorial maps in Richards, *California* (32), pp. 276, 286, 290
Entering on the wall map the most important and the unique farm products of California
  Dates
  Grapes
  Deciduous fruits: peaches, apricots, pears, apples
  Avocados
  Walnuts
  Melons
  Truck garden vegetables: lettuce, beans, celery, carrots
  Livestock
  Cotton
  Food for livestock: alfalfa, barley, oats
Discovering from reading, sharing of personal experiences, and talking with farmers and growers, that agriculture in California is different from that in other parts of the United States
Discussing differences and the reasons for them
  1. Farming in California is typical of industrialized agriculture, characterized by
    a. large land holdings by single individuals or companies
    b. owners living at some distance from the farm, usually in a city

c. farms supervised by a resident manager
d. farm labor that is migratory because of seasonal harvesting of large crops
e. year-round farm work done by machinery

2. Farming in most rural sections of the United States is characterized by
a. small land holdings
b. farmer-owner living on the farm and supervising the work
c. farmer raising his family on the farm and the children helping with farm chores
d. little need for migratory workers because of smaller crops and the great variety of crops being harvested at different times
e. farm help usually consisting of hired men who are accepted as part of the family group

Discussing the effects of industrialized farming on the lives of individuals, families, and communities

Reading Gates, *Sarah's Idea* (17)
Eyre, *Star in the Willows* (12)
Gates, *Blue Willow* (16)

Recalling the study of Early California which discussed the large Spanish and Mexican land grants made before California became a state, recognizing the relationship between these land grants and present-day land holdings

Discussing various types of people who come to California

Learning song, "Traveler's Luck," in *Our Land of Song* (68), p. 84

Discussing the social effects of migratory labor and suggesting means of bettering the conditions under which these families live

Noting on the wall map the areas from which the workers come: the Middle West, the South, and Mexico

Recalling the motion picture, *Give and Take with Mexico* (94)

Recognizing the importance of the contribution to agriculture made by the farm workers

In this section of the unit the citrus industry was emphasized because of its importance over a large area of southern and central California. The emphasis should vary with the locality and should be placed where it will have the greatest value for the children who engage in these experiences. A community whose main products are deciduous fruits, with the attendant

canneries and drying sheds, would probably emphasize these instead of citrus fruits. The types of experiences suggested would be applicable, whatever products receive the greatest emphasis.

The transition from the section on citrus fruits to the section on minerals should be made by removing the objects which are related exclusively to the citrus industry and replacing them with pictures, books and objects which pertain to minerals. The motion picture, *Far Western States* (91), has a section on mining which points out that California is first in the United States in the production of gold, platinum, borax, soda, mercury, iodine, potash, and silver and should stimulate interest in this section. The maps again will tie together the sections. The question again will arise: What other products are of particular importance in California?

Section III. MINING GOLD AND BORAX

I. *To Learn about Gold in California*

Reading from *World Book Encyclopedia* (40), p. 1129, discovering that gold is important in California

Seeing motion picture, *California's Golden Beginning* (89)

Examining charts in *Visual Geography* (13), pp. 42-43

Reading Pitkin and Hughes, *Seeing Our Country* (31), pp. 366-68
Stellman, *Mother Lode* (37)
Smith, *California* (36), pp. 41-42
Heffernan, *Desert Treasure* (19), pp. 197-200

Locating on wall map the chief mining centers of California

Discovering that there are gold mining areas in almost every county in California and that California has led all the states in gold production from 1848 to the present time

Inviting an experienced prospector to tell of his experiences in searching for gold

Listening to and participating with Young People's Record, "The Concertina that Crossed the Country" (81)

Enjoying R. C. A. Rhythmic Activities, "Irish Washerwoman" and "Turkey in the Straw" (81)

Visiting a nearby museum to see gold mining tools

Reading about Marshall's discovery of gold

Dramatizing the story of Marshall's discovery

Reading about the earlier discovery in southern California in Stellman, *Mother Lode* (37)
Reading "Off for California" from McNeer, *The Story of California* (21)
Listening to teacher read excerpts from Caughey, *California* (43), p. 308
Seeing motion picture, *Placer Gold* (106)

Discussing methods of obtaining gold

1. Panning for gold
2. Placer mining with sluice boxes
3. Hydraulic placer mining
4. Dredging
5. Deep mining

Discovering that the form and place in which gold occurs determines to some extent the method of mining used

1. "Free" gold (as dust, small particles, or nuggets) is obtained from gold-bearing sands and gravels
   a. at or near the surface by
      (1) washing with water in a gold pan, where the gold settles to the bottom
      (2) washing in sluice boxes, where gold caught by the riffles can be gathered or caused to adhere to quicksilver
   b. from high banks by washing down the gravel with large jets of of water under heavy pressure, and further washing in sluices
   c. from beneath the surface, as in river beds, by dredging with machines which lift the gravel into sluices
2. Gold found in hard ore, such as quartz rock or pyrites, usually occurs in veins deep in the earth, and must be mined by drilling and blasting. The loosened rock is then crushed in a stamp mill so that the gold can be separated from it with water or chemicals.

Listening to poems of Bret Harte, Ina Coolbrith, Joaquin Miller
Singing songs of gold rush days:
"California," *On Wings of Song* (74), p. 56
"Great Grandma," *Americans and Their Songs* (76), p. 127
Songs of Old California (85), Decca Album
Learning songs
"Sacramento," *Our Land of Song* (68), p. 108, and *Music in the Air* (71), p. 93
"Oh, California," *Our Land of Song* (68), p. 130
Seeing motion picture, *Sacramento* (110)

Reading stories of the gold rush days

Discovering that Samuel Clemens lived in the Mother Lode country and wrote "The Celebrated Jumping Frog of Calaveras County"

Reading some of Mark Twain's stories

Examining specimens of gold-bearing ore in rock collections at a local museum

Collecting samples of quartz and pyrites, examining them with microscope, labeling as to kind, place found, and date discovered

Crushing some of the ore and washing it

Placing quicksilver in a pan and making amalgam

Heating amalgam to recover the speck of gold

Seeing motion picture, *Overland to California* (103)

Discussing the hard work and privations of the early gold rush days

Learning other songs of the gold rush days

"Sweet Betsy from Pike" in *On Wings of Song* (74), p. 130, and *American Singer* (70), Book VI, p. 152

"Clementine" in *On Wings of Song* (74), p. 116

"Abalone" in Sandburg, *American Song Bag* (77), p. 333

"The Railroad Cars Are Coming," in Sandburg, *American Song Bag* (77), p. 358

"Rio Grande" (American sailor's chantey), *Our Land of Song* (68), p. 63

Kinscella, *History Sings* (54), pp. 279-84

Entering on the map of California the first gold mining areas in California—Sutter's Mill and San Fernando Valley

II. *To Understand the Far-reaching Effects of the Discovery of Gold in California*

Tracing the effects of the discovery of gold on the development of California

Recalling motion picture, *Sacramento* (110)

Discussing the amount of gold mined from 1848 to 1948

Finding answers to such questions as the following:

1. How did the production of gold in California affect national events such as the Civil War?
2. How did it affect the settlement of other western states?
3. In what ways did it affect immigration to the United States?
4. What effect did hydraulic mining have on the surrounding country?

III. *To Find Out about Other Important Minerals*

Discussing other minerals that are important in California
Recalling motion picture, *Far Western States* (92)
Examining statistical tables in Smith, *California* (36), pp. 78-79
Discovering that borates rank high in value
Recalling that California produces almost all of the world's supply of borax
Asking questions:
1. Why is borax important?
2. What are some of its uses?
3. Where is it found?
4. Is it used in raw form or is it refined?

Discussing how to find out about borax
Deciding to write to Pacific Borax Company, Los Angeles, to obtain pamphlets and pictures
Recalling standards for a business letter, and writing letters
Evaluating letters and selecting for mailing
Seeing motion picture, *National Resources of the Pacific Coast* (100)
Visiting the county library to locate books and articles on borax
Examining pamphlets and pictures from the borax company
Discovering the many household uses of borax
Bringing samples of household products made of borax: water softeners, cleansers, soap chips, boric acid, floor surfacer
Discovering the various ways borax is used in industry: enamel ware, pottery, glass, brazing and welding, metallurgy, leather tanning, textiles, paper manufacturing, adhesives, fireproofing, medicinal and pharmaceutical products, cleaner for citrus fruits

IV. *To Find Out How Borax Is Mined*

Discussing where borax is found in California
Seeing motion picture, *Historic Death Valley* (97)
Examining pictures and reading in pamphlets and magazines:
California History Nugget, VI (February, 1939), pp. 140-45 (7)
Ralph F. Linder, "From Death Valley We Get Borax," *Pacific Chemical and Metallurgical Industries,* April, 1941
Discussing how borax is recovered
Visiting a borax mine such as those at Furnace Creek or at Boron near Mojave; talking with the workers and the manager; observing the

machine used for mining borax; examining the crystals and finding out how crystals are formed

Dramatizing a story of the finding of a borax deposit

Painting pictures of the desert showing deposits of borax

Reading stories and listening to radio stories of "Twenty-Mule Team" experiences

Visiting a borax refinery, such as the one at Wilmington from which borax and its products are shipped throughout the world

Section IV. CALIFORNIA'S DEVELOPMENT

I. *To Understand California's Interdependence in the World*

Discussing and locating on maps the places to which borax is shipped

Studying charts and graphs to see California's place among states in wealth, education, health; referring to Mitchell, *My County 'Tis of Thee* (59), pp. 36-37

Summarizing California's contributions to the world

1. The products of the redwood forests in materials and inspiration
2. Half the world's supply of dried fruits
3. Ninety per cent of the world's borax
4. Large percentage of the world's supply of oranges, almost all of the lemons
5. Much of the world's supply of frozen fruits, vegetables, and fish
6. Many valuable minerals: gold, platinum, silica, and mercury
7. Recreation areas which attract people from all over the world

Discussing California's needs from other parts of the world: workers, automobiles and farm machinery, iron and steel, rubber, sugar, coffee, other raw materials and manufactured goods

Indicating on a world map the sources of the imports and the destinations of the exports

Listing certain problems that become evident in discussing California's needs

II. *To Understand California's Problems*

Summarizing California's problems and discussing possible solutions:

1. Inadequate water supply
2. Need for conservation of natural resources: soil, lumber, fish, game, water, petroleum, natural gas, minerals, wild life, trees and shrubs, useful insects

Making a chart of natural resources and conservation measures, such as that shown in the accompanying illustration

CHART

NATURAL RESOURCES AND CONSERVATION MEASURES

Resource	*Problem*	*Conservation Measures*
Water	To hold water for plant use	Maintain ground cover of grass and trees
	To raise the water table	Maintain settling basins
	To store water for irrigation	Build reservoirs
	To maintain constant flow	Build check dams, levees, diversion dams, flood control systems
	To prevent pollution of streams and wells	Control disposal of waste
Soil	Protection from water	Planting shrubs and trees Controlling grazing Limiting plowing of dry soils Maintaining adequate grass cover Contour planting Strip cropping
	Protection from wind erosion	Planting shelter belts of trees
Minerals	Using economical ways of extracting minerals	Laws to control mining
	Using minerals economically	Constantly improving methods of extraction Increasing efficiency in use Finding ways of extending the usefulness of materials
Trees and Shrubs	Preventing forest fires	Maintaining efficient forest services to control fires, cutting and grazing
	Preventing excess cutting of trees, clearing of land	
	Replanting burned over or cut over areas	Public and private tree planting projects
	Protecting trees from disease	Control of pests and diseases by adequate inspection, prevention, and eradication measures

3. Need for flood control (to prevent erosion and excessive run-off by check dams, reservoirs, settling basins, and reforestation)
4. Lack of iron, steel, and coal (may be offset by developing substitutes such as plastics and synthetics; using hydroelectric power for heat and motive power)
5. Insufficiency of seasonal labor for harvesting crops

6. Need to improve living conditions for agricultural and industrial workers
7. Traffic congestion in and around large cities (may be eliminated by constructing freeways and providing ample parking spaces other than on streets)

III. *To Understand Reasons for California's Rapid Development*

Examining population maps and noticing changes

Discussing types of people who come to California: workers, tourists, industrial and professional people, farmers, trades people, students, retired people

Making pictorial graph showing population increase from 1849 to 1949

Discussing why people come to California

A. Work opportunities in agriculture, industry, professions, service trades, building trades, and transportation, because of extensive arable land, large fertile valleys
   1. Wide variety of labor needs
   2. Mild climate allows year-round work
   3. Excellent highways for easy movement
   4. Increasing population creates more jobs in service and building trades
   5. Good conditions for workers because of mild climate, educational and recreational opportunities, rising wage standards

B. Industrial and business opportunities in manufacturing, mining, agriculture, processing and preserving food, building trades, radio, motion-picture production, transportation
   1. Wealth of natural resources, rare and valuable minerals, lumber, fish, harbors, large areas available for cultivation, water, climate
   2. Highly specialized farm products: early fruits, vegetables, melons, rare products, fine quality products
   3. Excellent help for farmers through mechanization, farm bureaus, experimental stations, agricultural extension services
   4. Excellent highways, airfields, railroad facilities, and other shipping facilities
   5. Large demand for industrial building and housing
   6. Available hydroelectric power

C. Educational opportunities
   1. Schools available to all, from kindergarten pupils to adults
   2. Libraries, museums, art galleries, and exhibits
   3. Historical points of interest, missions, monuments
   4. State agricultural college and experiment stations
   5. State university extension services
   6. Observatories: Palomar, Mt. Wilson, Griffith Park, Lick
   7. Zoos, parks, beaches, forest reserves, supervised camps
   8. Expositions and fairs
   9. Schools for specialized training in music, drama, art, medicine, technology, science

D. Recreational opportunities: seashore, lakes, rivers, mountains, deserts, national forests, national and state parks
   1. Beautiful scenery, of wide variety
   2. Excellent hunting, fishing, and camping facilities
   3. Wide variety of climatic and weather conditions, winter sports, summer and winter resorts
   4. Excellent highways to points of interest
   5. Special interest groups such as: folk dance clubs, garden clubs, historical societies, hiking, bicycling, or horseback riding groups

E. Opportunities for healthful, pleasant living
   1. Climatic advantages: mild winters, many days of sunshine, and dry air, conducive to outdoor living and requiring only lightweight clothing
   2. Availability of fresh fruits and vegetables all year round
   3. Many community activities, educational and recreational activities
   4. Excellent transportation facilities: harbors, railroad terminals, airports, and bus facilities
   5. Interesting cities: San Francisco, Los Angeles, Hollywood, San Diego, Sacramento, Fresno, Bakersfield

F. Cultural opportunities
   1. Radio broadcasting stations
   2. Symphony concerts
   3. Opera companies
   4. Ballet and other dance troupes
   5. Motion picture studios
   6. Little theaters

G. Festivals, fiestas, rodeos, celebrations
   1. California's colorful history
   2. Strong Mexican influence seen in fiestas
   3. Excitement of western cowboy rodeos
   4. Centennial celebrations held throughout the State during 1948, 1949, 1950

Entering on large map the mountains, rivers, valleys, national and state parks, harbors, lakes, deserts, and large cities

IV. *To Find Out How People Discover California's Advantages*

Investigating the part that motion pictures, the radio, newspapers, and chamber of commerce pamphlets have in publicizing certain areas of the state

Discussing how poets and musicians have sung the praises of California throughout the world

Learning about some of California's composers, poets, writers, and other famous people

Learning songs: "California, Here I Come" (79)
"Californ-I-Ay" (80)
"I Love You, California" (78)

Discussing other people who have contributed to California's fame: Samuel Clemens, Leland Stanford, Luther Burbank, Herbert Hoover, Will Rogers, and many others

Writing to chambers of commerce in various localities for materials; examining them, evaluating them as to popular appeal, realistic point of view, authenticity

Writing publicity articles on the local community or for the state; illustrating these and making them into brochures to send to friends who live far away

Illustrating articles on the local centennial celebrations to be published in school or community papers

Reference for teacher: "California Songs and Dances to Enrich Centennial Celebrations in California," *California Journal of Elementary Education,* XVI (August, 1947), pp. 22-30

Writing reports of centennial affairs to be included in a notebook on California

Making a wall frieze showing interesting phases of California's development

SECTION V. CULMINATION OF THE STUDY OF MODERN CALIFORNIA

Discussing ways of culminating the study
Selecting pictures, murals, notebooks, and materials for display at the culmination
Deciding to have a pageant showing California's contributions to the world: petroleum, citrus fruits, borax, gold, and other products which the children think are of importance
Using the large maps of California and of the world to show the routes the products travel to various parts of the globe
Writing the scenes in the pageant and selecting parts
Inviting parents and friends to share in the culminating program

ANTICIPATED OUTCOMES OF THE STUDY

A carefully developed sequence of such experiences as are suggested in this outline should result in deep and lasting values to the children who engage in the activities. Growth should be evident in understandings, skills, and appreciations and in definite improvement in democratic behavior. Outcomes from the study should include the following:

Growth in appreciation
- of California and the people who have made it great
- of the importance of California in the nation and the world
- of the natural and human resources of California and the need for conserving these
- of the contributions made by various people to California's development: workers, business people, tourists, educators, scientists, inventors, writers, artists and others

Growth in understanding
- processes involved in producing agricultural products, petroleum and mineral products
- difficulties and problems overcome in producing materials and in developing industries
- relationships between different industries: agriculture, mining, manufacturing, transportation, housing
- interdependence of California, the rest of the nation, and the world

how people work, where they work, and why they move from one place to another
the effect of geographical factors on the development of California
the effect of historical factors on the development of California

Growth in abilities
in expressing themselves through writing, speaking, graphic arts, dramatizations, and music
in the communication skills of reading, listening, speaking, and writing
in planning, sharing and evaluating; building judgment and developing discrimination
in working together for a common goal
in handling tools efficiently
in working out problems with intelligence and efficiency
in using materials to produce desired objects
in observing, selecting, experimenting, using scientific methods, and developing scientific attitudes
in using resource materials, books, motion pictures, and raw materials to gain information and understanding

References

References for Children

1. Alderman, Francis L., and Wilson, A. M. *About Los Angeles.* Boston: D. C. Heath & Co., 1948.

Interesting, authentic stories of the people and their activities.

2. Beals, Frank Lee. *The Rush for Gold.* Copyright by Wheeler Publishing Company, 1946. California State Series (grade 4). Sacramento: California State Department of Education, 1949.

Interesting stories of early California. (9-12 years)

3. Bethers, Ray. *The Magic of Oil.* With diagrams by the author. New York: Aladdin Books, 1949.

Word and picture story of how oil began, where it is found, and how the modern miracle of refining transforms oil into hundreds of useful things. (8-12 years)

4. Buell, Robert Kingery. *California Stepping-Stones.* Stanford, California: Stanford University Press, 1948.

Interesting stories about early California, with good sections on the discovery of gold and the resulting activities. (10-14 years)

5. BUFF, MARY, and BUFF, CONRAD. *Big Tree.* New York: The Viking Press, 1946.

The story of a Giant Sequoia tree, beautifully written and illustrated. (10-14 years)

6. *California and Arizona Citrus Fruits (An Epic Story).* Prepared by Santa Fe System Lines. Chicago: Regensteiner Corp., 1938.

Good information on citrus fruits. Can be read by best readers in grades 5 and 6.

7. *California History Nugget,* Vol. VII (October, 1939, to March, 1940). Sacramento: California State Department of Education, 1939-40.

Six issues of interest to students of California, containing valuable articles on agriculture, redwood trees, fishing, irrigation, William Mulholland, oranges, raisins, and Sutter's Fort.

8. *California's Natural Wealth: A Conservation Guide for Secondary Schools.* Bulletin of the California State Department of Education, Vol. IX, No. 4, December, 1940. Sacramento: California State Department of Education, 1940.

Can be read by best readers in grades 5 and 6.

9. *The Central Valley Project.* Compiled by workers of the Writers' Program of the Work Projects Administration in Northern California. Sacramento: California State Department of Education, 1942.

Excellent reference on irrigation and water conservation. Can be read by best readers in grades 5 and 6.

10. CUMLEY, RUSSELL W. *America's Oil.* New York: Row, Peterson & Co., 1942.

Excellent photographs and charts. Can be read by best readers in grades 5 and 6.

11. DUNN, MARSHALL, and MORRISETT, LLOYD N. *Power for America.* Yonkers-on-Hudson, N. Y.: World Book Co., 1943.

Written for older children but can be read by good readers in elementary grades. Excellent on petroleum.

12. EYRE, KATHERINE WIGMORE. *Star in the Willows.* New York: Oxford University Press, 1946.

Interesting story of family life on a California ranch. (8-12 years)

13. FLOERCKY, HERBERT EDWARD. *Visual Geography of California.* California State Series. Sacramento: California State Department of Education, 1933. *Out of print.*

Excellent charts, graphs, and pictures. Statistics are for 1931.

14. FLOERCKY, HERBERT EDWARD, and SHIPPEY, LEE. *California Progress.* Great Projects Which Overcome Handicaps of the Past and Prepare the Way for a Greater Future. California State Series (grades 4-8). Sacramento: California State Department of Education, 1936. *Out of print.*

Deals with Hoover Dam, the Colorado River Aqueduct, and the Central Valley Project.

15. FLOHERTY, JOHN J. *Flowing Gold.* Philadelphia: J. B. Lippincott Co., 1945.

Fascinating story of oil, full of adventure, human interest, and information. Unusual photographs. Best readers in grades 5 and 6 can read this.

16. GATES, DORIS. *Blue Willow.* New York: The Viking Press, 1940.

Beautifully written story of a migratory family in the San Joaquin Valley. (10-14 years)

17. GATES, DORIS. *Sarah's Idea.* New York: The Viking Press, 1938.

Story of two children who live on a prune ranch. (9-14 years)

18. GROVES, GEORGE W. *National and State Forests and Parks.* Science Guide for Elementary Schools, Vol. V, No. 4, November, 1938. Sacramento: California State Department of Education, 1938.

19. HEFFERNAN, HELEN; RICHARDS, IRMAGARDE; and SALISBURY, ALICE. *Desert Treasure, A Story of Adventure;* and *The Mohave Desert, Its People, Plants, and Animals.* San Francisco: Harr Wagner Publishing Co., 1948.

Interesting and exciting adventure stories of the desert. A section contains information on borax and on gold and silver. (9-12 years)

20. HERZ, L. ERNEST. *Marine Food and Game Fishes of California.* Science Guide for Elementary Schools, Vol. VI, No. 3, February, 1941. Sacramento: California State Department of Education, 1941.

21. MCNEER, MAY YONGE. *The Story of California.* New York: Harper & Bros., 1944.

The story of California in pictures. Beautiful lithographs. (10-14 years)

22. MEIGS, PEVERIL, 3d. *Climates of California.* Science Guide for Elementary Schools, Vol. V, No. 7, August, 1938. Sacramento: California State Department of Education, 1938.

23. MORSE, STANLEY W. *Water, Its Conservation and Use.* Science Guide for Elementary Schools, Vol. III, No. 8, March, 1937. Sacramento: California State Department of Education, 1937.

24. O'DONNELL, MABEL. *Engine Whistles.* Alice and Jerry Books, Fifth Reader. New York: Row, Peterson & Co., 1942.

Good stories on the first automobiles.

25. *Oil and Gas.* Prepared by the Pennsylvania Writers' Program, edited by Elizabeth Smedley. Elementary Science Series, No. 36. Chicago: Albert Whitman & Co., 1944.

26. PADEN, WILLIAM G. *Seeing California.* New York: The Macmillan Co., 1926.

Deals with topography and industries of California. Easy reading.

27. PEATTIE, RODERICK (editor). *The Pacific Coast Ranges.* New York: The Vanguard Press, Inc., 1946.

Colorful chapters on the people of California and the flora and fauna of the ranges; beautiful descriptions. Can be read by the best readers in grades 5 and 6.

28. PETERSHAM, MAUD, and PETERSHAM, MISKA. *The Story Book of Cotton.* Chicago: The John C. Winston Co., 1939.

Excellent picture book on cotton.

29. PETERSHAM, MAUD, and PETERSHAM, MISKA. *The Story Book of Oil.* Chicago: The John C. Winston Co., 1935.

Excellent picture book on petroleum.

30. PETERSHAM, MAUD, and PETERSHAM, MISKA. *The Story Book of Wool.* Chicago: The John C. Winston Co., 1939.

Excellent picture book on wool.

31. PITKIN, WALTER B., and HUGHES, HAROLD F. *Seeing Our Country.* Book I and Book II. New York: The Macmillan Co., 1939.

Interesting, authentic stories of children who travel through the United States. Good sections on citrus fruits, gold, and lumbering.

32. RICHARDS, IRMAGARDE. *California.* Copyright by Harr Wagner Publishing Co., 1942. California State Series (grade 4). Sacramento: California State Department of Education, 1942 (*out of print*).

Interestingly written. Excellent material on the geography, the people, and the products of California. (10-14 years)

33. RICHARDS, IRMAGARDE. *Our California Home.* Copyright by Harr Wagner Publishing Co., 1933. California State Series (grade 4). Sacramento: California State Department of Education, 1933.

Excellent material on the people, the geography, and the industries of California. Good reading references and suggestions for experiments.

34. SALISBURY, ETHEL IMOGENE. *Boys' and Girls' California.* Boston: Houghton Mifflin Co., 1925.

Good on petroleum and agriculture. (10-14 years)

35. SIMPICH, FREDERICK. "More Water for California's Great Central Valley," *National Geographic Magazine,* XC (November, 1946), 645-64.

36. SMITH, J. RUSSELL. *California: Life, Resources, and Industries of the Golden State.* Copyright by The John C. Winston Co., 1936. California State Series (grades 7 and 8). Sacramento: California State Department of Education, 1936 (*out of print*).

Good for graphs, maps, charts, and general information, although not now up to date. (9-12 years)

37. STELLMAN, LOUIS J. *Mother Lode: The Story of California's Gold Rush.* San Francisco: Harr Wagner Publishing Co., 1934.

Excellent on the history of gold mining. Good section on modern gold mining. Can be read by best readers in grades 5 and 6.

38. *The Story of California Oranges and Lemons.* 1943. Free booklet distributed by the Educational Division, California Fruit Growers Exchange, Sunkist Building, Los Angeles 55.

39. WILBUR, RAY LYMAN, and DUPUY, W. A. *Conservation in the Department of the Interior.* Washington: U. S. Department of the Interior, 1931.

Excellent chapter on oil conservation. May be read by the best readers in grades 5 and 6.

40. *World Book Encyclopedia,* "California," Vol. III, pp. 1122-40. Chicago: Field Enterprises, Inc., 1949.

Can be read by the best readers in grades 5 and 6.

41. WYLER, ROSE, and MCSPADDEN, W. W. *Oil Comes to Us.* Round Robin Series. New York: Grosset and Dunlap, 1937.

Good picture book for grades 5 to 8.

References for Teachers

42. *California, A Guide to the Golden State.* Compiled and written by the Federal Writers Project. American Guide Series. New York: Hastings House, 1939.

43. CAUGHEY, JOHN WALTON. *California.* New York: Prentice-Hall, Inc., 1940.

Unusually well written sections on citrus, borax, petroleum. Excellent bibliography. The book is for adults, but selections can be read by the best readers in grades 5 and 6.

44. CAUGHEY, JOHN WALTON. *Hubert Howe Bancroft, Historian of the West.* Berkeley: University of California Press, 1946.

45. CLELAND, ROBERT G. *California in Our Time, 1900-1940.* New York: Alfred A. Knopf, 1947.

Excellent material, written for adults but usable with mature pupils in grades 5 and 6.

46. CLELAND, ROBERT GLASS, and HARDY, OSGOOD. *March of Industry.* Los Angeles: Powell Publishing Co., 1929.

Good on history of agriculture, water power, and petroleum in California. A reference for teachers that can be read by best readers in grades 5 and 6.

47. *Contribution of Petroleum to Industry, Farm, and Home.* Bureau of Educational Services, American Petroleum Institute. New York: The Byron G. Moon Co., 1946.

48. "Economic Survey of California and Its Counties," *California Blue Book, 1946,* pp. 409-772. Prepared by Research Department, California State Chamber of Commerce. Sacramento: Printing Division, State Department of Finance, 1946.

The separate reprint of this survey formerly sold by the State Chamber of Commerce is now out of print. Many public libraries have copies.

49. FAIRBANKS, HAROLD. *Southern California.* San Francisco: Harr Wagner Publishing Co., 1929.

50. HUNT, ROCKWELL D. *California, a Little History of a Big State.* Boston, D. C. Heath and Co., 1931.

51. HUNT, ROCKWELL D. *New California the Golden.* Copyright by Silver Burdett Co., 1933, 1936. California State Series (grades 7 and 8). Sacramento: California State Department of Education, 1937 (*out of print*).

52. HUTCHINSON, CLAUDE B. *California Agriculture.* Berkeley: University of California Press, 1946.

53. JACKSON, JOSEPH HENRY. *Anybody's Gold.* New York: D. Appleton-Century Co., Inc., 1941.

Good maps of the mining areas. Sections can be read by best readers in grades 5 and 6.

54. KINSCELLA, HAZEL GERTRUDE. *History Sings.* New York: The University Publishing Co., 1940.

"Just California," poem by John Steven McGroarty, p. 241; songs of the gold rush, pp. 279-84.

55. MARKHAM, EDWIN. *Songs and Stories.* Los Angeles: Powell Publishing Company, 1931.

A compilation of famous stories and poems about California.

56. McWILLIAMS, CAREY. *Factories in the Fields: The Story of Migratory Farm Labor in California.* Boston: Little, Brown and Co., 1939.

57. MILLER, ROBERT F. *Sheep Production in California.* California Agricultural Extension Service Circular 49, November, 1930, revised 1942. Berkeley: College of Agriculture, University of California, 1942.

Excellent pictures, diagrams, and tables.

58. *Mining in California.* Report of the State Mineralogist, Vol. XXVIII, No. 2. Sacramento: California State Division of Mines, April, 1932.

Especially valuable for the following articles: Herbert A. Franke, "Selected Bibliography on Placer Mining," 219-24; C. McK. Laizure, "Elementary Placer Mining Methods and Gold Saving Devices," 112-204; H. H. Symons, "The Pan, Rocker, and Sluice Box," 205-13. In 1946 the title of this periodical report was changed to *California Journal of Mines and Geology.*

59. MITCHELL, LUCY SPRAGUE; BOWMAN, ELEANOR; and PHELPS, MARY. *My Country, 'Tis of Thee: The Use and Abuse of Natural Resources.* New York: The Macmillan Co., 1940.

Excellent background for teachers on conservation of natural resources. Unusually vivid pictorial graphs and charts.

60. MUIR, JOHN. *The Mountains of California.* New York: The Century Company, 1894, 1901, 1903, 1911.

61. "The Pacific Coast," *Fortune,* XXXI (February, 1945).

Good background for teachers.

62. PAUL, RODMAN W. *California Gold.* Cambridge, Massachusetts: Harvard University Press, 1947.

63. *Petroleum Industry in the United States.* Los Angeles: Division of Curriculum, Los Angeles County Schools, 1936. (Mimeographed.)

64. SCHERER, JAMES A. B. *Thirty-first Star.* New York: G. P. Putnam's Sons, 1942.

65. STOCK, CHESTER. *Rancho La Brea.* Los Angeles: Los Angeles Museum of History, Science, and Art, 1930 (3d edition, 1946).

Information on prehistoric animals.

66. WESTON, OTHETO. *Mother Lode Album.* Stanford, California: Stanford University Press, 1948.

Music Books

67. ARMITAGE, THERESA, and OTHERS, editors. *Music Everywhere.* A Singing School. Copyright by C. C. Birchard & Co., 1943. California State Series (grade 6). Sacramento: California State Department of Education, 1945 (*out of print*).

68. ARMITAGE, THERESA, and OTHERS, editors. *Our Land of Song.* A Singing School. Copyright by C. C. Birchard & Co., 1942. California State Series (grade 5). Sacramento: California State Department of Education, 1945 (*out of print*).

69. ARMITAGE, THERESA, and OTHERS, editors. *We Sing.* A Singing School. Copyright by C. C. Birchard & Co., 1940. California State Series (grade 4). Sacramento: California State Department of Education, 1942.

70. BEATTIE, JOHN W., and OTHERS, editors. *The American Singer.* San Francisco, American Book Company.
Book IV, 1945
Book V, 1946
Book VI, 1947

71. DYKEMA, PETER W., and OTHERS, editors. *Music in the Air.* A Singing School. Copyright by C. C. Birchard & Co., 1947. California State Series (grades 1 to 8). Sacramento: California State Department of Education, 1946.

72. HARTSHORN, WILLIAM C. *Making Friends with Music: The Pilot.* World of Music Series. Boston: Ginn and Co., 1940.

73. HARTSHORN, WILLIAM C. *Making Friends with Music: Progress.* World of Music Series. Boston: Ginn and Co., 1940.

74. HOOD, MARGUERITE V., and OTHERS. *On Wings of Song.* World of Music Series. Boston: Ginn & Co., 1945.

75. JAMES, PHOEBE. *Harbor Rhythms.* Pacific Palisades, California: Phoebe James, 1948.

76. LUTHER, FRANK. *Americans and Their Songs.* New York: Harper & Bros., 1942.

77. SANDBURG, CARL. *The American Songbag.* New York: Harcourt, Brace & Co., 1927.

Sheet Music

78. FRANKENSTEIN, A. F. "I Love You, California." Sheet Music. New York: Miller Music, Inc., 1941.

79. JOLSON, AL. "California, Here I Come." Sheet Music. New York: Witmark & Sons, 1924.

80. KERN, JEROME. "Californ-I-Ay." Sheet Music. New York: T. B. Harms Co., 1944.

Records

81. "The Concertina That Crossed the Country." Young People's Record.

82. "Irish Washerwoman," in R. C. A. Rhythmic Activities, Vol. V, E-75.

83. "The Love for Three Oranges," by Serge Prokofieff. Victor Record 7197.

84. "Masquerade," in R. C. A. Rhythmic Activities, Vol. V, E-75 (Sailor's Hornpipe).

85. SONGS OF OLD CALIFORNIA. Decca Album 49:

2472 { "On the Banks of the Sacramento" (Gold Rush)
"Sailing for San Francisco" (Gold Rush)
"Jackson" (Gold Rush)

2473 { "Joe Bowers" (Gold Rush)
"Santy Ana" (Gold Rush)

2474 { "Linen Clothes" (overland and mining)
"Hangtown Gals" (overland and mining)

86. "What the Lighthouse Sees." Young People's Record.

Motion Pictures

87. *Builders of the Broad Highway.* 16-mm., 22 min., 2 reels, sound, color. Frith Films, 840 Seward St., Hollywood 38, Calif., 1941. $130.

Part I deals with the laying out of the job, blueprinting, contracting, surveying, dynamiting, grading, installing underground drainpipes and domestic water pipes, arc welding, and putting power, telegraph, and telephone lines high above the ground.

Part II deals with the building of above-ground construction work, such as bridges, underpasses, retaining walls, and the laying of concrete.

Carpenters, steel workers, concrete mixers, crane operators, pile drivers, inspectors, and overseers all do their part. Heavy mechanical spreaders and finishing machines give the last touches to the highway.

88. *California.* 16-mm., 10 min., 1 reel, sound, color. Dudley Pictures Corp., 9908 Santa Monica Blvd., Beverly Hills, Calif., 1946. $85; black and white, $28.50.

A panoramic description of the state, describing its major cities, scenic spots, and most important industries.

89. *California's Golden Beginnings.* 16-mm., 2 reels, sound, color. Produced by California Centennials Commission and State Department of Education, in collaboration with the motion picture industry, 1948. Sold and distributed by Cinecolor Corp., 2800 E. Olive Ave., Burbank, Calif. $62.83, plus handling charges (discounts from 7% to 40% on quantity orders); rental (Univ. of Calif., Extension Division), $1.00.

A dramatic protrayal of the discovery of gold at Sutter's Mill.

90. *Colorado River.* 16-mm., 10 min., 1 reel, sound, color. Coronet Instructional Films, 65 E. South Water St., Chicago 1, Ill., 1947. $90; black and white, $45.

Shows the work the Colorado River has done in carving out its course, and the dams which hold back the water for hydroelectric and irrigation purposes.

91. *Cotton.* 16-mm., 11 min., 1 reel, sound. Elementary Social Studies series. Encyclopedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, Calif., 1946. $45; rental, $2.50.

Each process in the production of raw cotton and the manufacture of it into clothes is illustrated. It shows such things as picking, ginning, cleaning, spinning, and weaving.

92. *Far Western States.* 16-mm., 11 min., sound. The Americas series. Encyclopedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, Calif., 1942. $45; rental, $2.50.

History, geography, agriculture, and industries of the Far West.

93. *Freighter at Sea.* 16-mm., 17 min., 2 reels, sound, color. Academy Films, P. O. Box 3088, Hollywood, Calif., 1948. $135; rental, $8.00; also in black and white, $67.50, rental, $4.00.

Shows the work of the various members of the crew as they navigate a boat from port to port. The preparation of the food, bunks for passengers, signals to engine room, safety measures to prevent collision, and methods of checking the course by radio are all shown in this picture.

94. *Give and Take with Mexico.* 16-mm., 22 min., 2 reels, sound, color. Frith Films, 840 Seward St., Hollywood 28, Calif., 1944. $130.

The experiences of two young Mexican men, who have been imported to help with the crops, as they do their work. One of these was in the apple country of the Northwest and the other in the lemon and orange groves of California.

95. *The Golden Journey.* 16-mm., 12 min., silent. California Fruit Growers Assn., Los Angeles, 1940.

The orange from the ranch through the packing house.

96. *Golden West.* 16-mm., 9 minutes, sound. Adventure Thrills series. Official Films, Inc., 25 W. 45th St., New York 19, N. Y. $17.50; silent, $8.75.

A history of mining in the West, showing Navajo Indians, the Gold Rush, ghost towns, and the revival of old mines with modern methods and machinery.

97. *Historic Death Valley.* 16-mm., 22 min., sound, color. National Park series, new edition. Paul Hoefler Productions, 612½ S. Ridgeley Dr., Los Angeles 36, Calif., 1948. $160.

A journey in and around some of the most interesting sections of Death Valley.

98. *Irrigation Farming.* 16-mm., 11 min., sound. People at Work series. Encyclopedia Britannica Films, 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, Calif., 1939. $45; rental, $2.50.

Shows the storage of water and several methods of irrigation practiced by different farmers.

99. *Lumbering in the Pacific Northwest.* 16-mm., 15 min., silent. Encyclopedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, Calif., 1930. $24.

Shows the cutting and seasoning of logs, and the transporting of them from forest to market.

100. *Natural Resources of the Pacific Coast.* 16-mm., 10 min., 1 reel, sound, color. Coronet Instructional Films, 65 E. South Water St., Chicago 1, Ill., 1947. $90; black and white, $45.

Gives a glimpse of the magnitude of the lumbering, fishing, farming and mineral industries of the area. Tries to point out the necessity for conservation of all our resources.

101. *Oil for Aladdin's Lamp.* 16-mm., 24 min., 2 reels, sound. Revised edition. Shell Oil Co., Public Relations Department, 100 Bush St., San Francisco, 1948. Loan.

A general picture of the uses of oil, the development of the oil industry, the by-products that can be made, and the influence of the petroleum industry on the life of people at present.

102. *The Orange Grower.* 16-mm., 11 min., sound. People at Work series. Encyclopedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, Calif. $45; rental, $2.50.

Steps taken by the farmer to plant and harvest an orange crop. Various methods of protection against insects and cold spells are shown. Picking, sorting, and packing the oranges complete the steps in the task of getting them to market.

103. *Overland to California.* 16-mm., 15 min., silent. Encyclopedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, 1930. $24.

Evolution of westward highways from pioneer trails to modern air routes, showing wagon and railroad travel from the Great Salt Lake to the Golden Gate.

104. *The Pacific Coast.* 16-mm., 18 min., sound. March of Time Forum Films, 369 Lexington Ave., New York 17, N. Y., 1946. $55.

Views of various cities of the Pacific Coast are followed by pictures of industries and products such as lumbering, fishing, sugar beets, citrus fruit, grapes, and motion pictures. Population changes due to the war effort are pointed out.

105. *Petroleum.* 16-mm., 11 min., 1 reel, sound. General Science series. Encyclopedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, Calif., 1947. $45; rental $2.50.

Shows the major uses of petroleum, the oil producing areas of the United States, the essential steps in exploring, drilling, and refining oil. A world map shows the oil producing areas. Final scenes show the vital importance of petroleum in our modern industrial life.

106. *Placer Gold.* 16-mm., 10 min., sound, color. Pioneer Life series. Arthur Barr Productions, 1265 Bresee Ave., Pasadena 7, Calif., 1941. $75; silent, $30.

Shows four methods of mining with simple tools—gold pan, rocker or cradle, long tom, sluice box.

107. *Producing Crude Oil.* 16-mm., 15 min., silent. Encyclopedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, Calif., 1930. $24.

Shows drilling of oil wells, purpose of derricks, sharpening drill bits, striking oil, and laying pipe lines.

108. *Prospecting for Petroleum.* 16-mm., 23 min., 2 reels, sound, color. Shell Oil Co., Public Relations Dept., 100 Bush St., San Francisco, Calif., 1947. Loan.

The development of methods of finding oil deposits; ways of drilling oil wells; the geological formations where oil is usually found.

109. *Rivers of the Pacific Slope.* 16-mm., 10 min. 1 reel, sound, color. Coronet Instructional Films, 65 E. South Water St., Chicago 1, Ill., 1947. $90; black and white, $45.

Centered around the Columbia, Sacramento-San Joaquin, and Colorado river systems, this picture shows the commerce carried on, the logging, the fishing, the manufacture of electric power.

110. *Sacramento.* 16-mm., 5 min., sound, color. Capital Cities series. Produced by Paul Hoefler, 1945. Distributed by Simmel-Meservey, Inc., 321 S. Beverly Dr., Beverly Hills, Calif. $45.

A brief history of California, scenes of its capital city, glimpses into a few of the important industries of the state.

111. *Seaports of the Pacific Coast.* 16-mm., 10 min., 1 reel, sound, color. Coronet Instructional Films, 65 E. South Water St., Chicago 1, Ill., 147. $90; black and white, $45.

Shows that some cities have natural ports, and others, like Los Angeles, have built their own; scenes of activities typical of port cities.

112. *Trading Centers of the Pacific Coast.* 16-mm., 10 min., 1 reel, sound, color. Coronet Instructional Films, 65 E. South Water St., Chicago 1, Ill., 1947. $90; black and white, $45.

Pictures of Seattle, Portland, San Francisco, Los Angeles, and San Diego, pointing out what has made these cities grow into the largest on the Pacific Coast.

113. *Transportation in the United States.* 16-mm., 17 min., 1½ reels, sound. March of Time Forum Films, 369 Lexington Ave., New York 17, N. Y., 1948. $55.

Every year a ton of freight must be transported more than 4,000 miles to keep the average U. S. citizen supplied with basic necessities. The film shows the railroads, airplanes, trucks, and buses, as well as ships on the inland waterways, going about their work to meet these demands.

114. *Wealth of the Sea.* 16-mm., 15 min., silent. University of California, Berkeley, 1943.

Shows fishing for various kinds of sea food, such as sardines, oysters, shad, herring, lobster, and tuna.

115. *Wool.* 16-mm., 11 min., 1 reel, sound. Elementary Social Studies series. Encyclopedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill., or 1640 E. Mountain St., Pasadena 7, Calif., 1947. $45; rental, $2.50.

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